Beneath the Skin: Understanding Health Beliefs and Practices of Vaccine Hesitancy in Japan

A Cultural Anthropological Survey on Vaccine Hesitancy

Final Report

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Executive Summary

Currently, in Japan, a significant health challenge is the hesitancy towards vaccinations – specifically adult vaccinations for vaccine-preventable diseases (VPD). The ongoing COVID-19 pandemic emphasizes the importance of immunizations throughout the life course, especially within an ageing population to mitigate the burden on the healthcare system. However, research shows that Japan has one of the lowest rates of trust in the safety of vaccinations (30-39%). We cannot attribute low vaccination rates in Japan to a lack of public health education or lack of access. Japanese citizens visit their Health Care Professional (HCPs) 13 times a year on average, whereas American citizens visit doctors four times a year. The high levels of health literacy in Japan have not been translated to high vaccination uptake.

Therefore, further research is needed to understand the underlying reasons for vaccine hesitancy. In this project, we first conducted holistic research aimed at understanding the health behaviors behind vaccine hesitancy among the adult population.

Research methods based on social science methods, specifically the applied medical anthropology approach. Working with advisory board and focus group informants, we aimed to first identify health behaviors and perceptions around vaccinations in the community. Together with data from literature reviews and quantitative analyses, key issues essential for promoting behavioral change regarding vaccinations and insights toward policy implementation were presented. Multidisciplinary Advisory Group (MAG), consisting of Japanese and international experts across various fields on vaccine policy, will advise, assist, and evaluate the project design, implementation, and analysis.

Addressing the current perceptions surrounding vaccinations and working to remove the hesitancy in Japan should contribute significantly to the population's health and livelihood.

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1. Survey overview

Objectives of the survey

The primary objective of this study is to deepen the understanding of the actual conditions surrounding vaccine hesitancy in Japan. Beyond merely quantifying the current state of hesitancy, this project aims to derive specific guidelines and implications for how Japan should address vaccine hesitancy in the future. To this end, the study takes into full account the social and cultural backgrounds, as well as the unique contexts specific to Japan.

Approach

To address the social, cultural, and psychological factors underlying vaccine hesitancy, we conducted an integrated study incorporating multiple methodologies. With ethnographic research at its core, this study deployed a mixed-methods approach that included prior quantitative analysis to ensure credibility and representativeness. Specifically, three types of qualitative research were implemented: (1) hearings with experts, (2) Market Research Online Communities (MROC), and (3) in-depth interviews.

2. Expert hearings

2.1. Survey overview

Objective	To conduct preliminary research by having experts share their understanding of the current situation and issues to gather information on MROC screening requirements and hypotheses for subsequent research
Period	12 hearings conducted from September to November 2021 (Multiple interviews conducted with each subject)
Venue	Online using the Zoom conferencing system
Interview subjects	Doctors involved in vaccination support
Interview length	One hour per session

2.2. Survey results

2.2.1. Summary of hearing results

Key characteristics of vaccine hesitancy in Japan

- We do not observe much of the type of hesitancy that is close to refusal. Those who are vaccine hesitant are mainly unsure or somewhat anxious about vaccinations.
- Conversely, in Europe and the U.S., the group that is closer to refusal than hesitancy is a significant presence and can be subdivided into three categories along the lines of higher education and income, naturalism, and religion.
- Japan has similar tendencies for variation in vaccine hesitancy among these groups, particularly for educational level. Unlike in the West, in Japan, people with higher levels of education were less likely to express vaccine hesitancy. There is also a slight tendency toward vaccine hesitancy among naturalists in Japan.

Factors that contribute to vaccine hesitancy

- It is believed that hesitancy is the result of complex factors, but key factors that were identified are as follows.
- Influence from surroundings (family and friends): The main factor suggested was the disposition of Japanese people, in which people tend to make decisions that fall in line with prevailing attitudes with those in the middle tending to shift to either end when feeling ill-at-ease.
- Insufficient knowledge: One factor was insufficient education on vaccinations and education for building underlying scientific literacy.
- Factors among health professionals
  - Hesitancy among health professionals
  - Insufficient knowledge among health professionals: Knowledge is particularly lacking among non-pediatric physicians who are responsible for vaccinating adults. Items identified in the backdrop of this issue were a lack of vaccine-related curricula during medical education and the psychological aspect of physicians focusing their interests on their own fields of specialty.
- Accessibility
  - Costs associated with vaccinations
  - Access to vaccination sites
  - Convenience that matches individuals' lifestyles: Especially among adults (such as working adults and people raising children)
- Influence of the media: One factor is the influence of experts spreading inaccurate medical knowledge through the mass media. This also includes the influence of social networks, where information regarding adverse effects tends to spread more easily than information regarding the effects of vaccinating. For example, sensationalized media coverage of the vaccine for cervical cancer led to it being downgraded from an actively recommended vaccination to a recommended vaccination.

Methods of addressing vaccine hesitancy

- Approaches made on the individual level from health professionals (especially family doctors)
  - Motivational interviewing: An interactive approach in which the subject is not directly encouraged to vaccinate, but is instead asked their reasons for not vaccinating and is provided with responses to those reasons. This is an effective approach and can be easily applied to vaccination programs. However, due to physicians' busy schedules, it is difficult to implement this approach in Japan.
  - People who lack literacy are difficult to persuade, and people who do not seek vaccinations are set in their thinking. Approaches that suppress the hesitant group will be counterproductive.
  - As an item related to these topics, other potential measures might be to provide information to health professionals and to reexamine medical education programs.
- Accessibility
  - Expand vaccination sites (drugstores, workplaces, etc.), expand vaccine providers (nurses, pharmacists, etc.), simplify procedures (such as by utilizing My Number cards)
  - It is also important to create opportunities for children to receive annual checkups.
- Providing accurate information
  - Types of information that should be provided include information on: preventable diseases and health risks, vaccine effectiveness, and the risk of adverse reactions and the Relief System for Adverse Drug Reactions.

- It will also be important to establish an environment in which anyone can access information easily (for example: utilizing forms of media that are familiar parts of everyday life, like bus and train advertisements, to help reduce feelings of hesitancy).
- As for the parties providing information, it will be crucial for the Government to serve as a leader in disseminating information that is easy to understand. This will also contribute to creating a social atmosphere.

- Education to build scientific literacy: It will be essential for people to acquire scientific thinking during childhood, as it is difficult to provide education to adults.
- Mandatory vaccinations: While mandatory vaccinations are likely to result in higher vaccination rates among hesitant people, they are counterproductive for reaching people who are strongly opposed to vaccination. Making vaccinations mandatory also leads to concerns regarding discrimination toward unvaccinated individuals, so one idea might be to establish a gradation according to disease.

Hypotheses regarding factors for vaccine hesitancy based on expert hearings

Hypotheses regarding factors for vaccine hesitancy based on the results our expert hearings are as described below.

Figure 2-1: Hypotheses regarding factors for vaccine hesitancy based on expert hearings

Category	(Hypothesized) element causing vaccine hesitancy
1. Accessibility and cost	• Poor access to vaccination sites • Cost of getting vaccinated • Costs associated with vaccination site access (transportation fees)
2. Scientific literacy and information provision	• Inability to understand the effects and risks of vaccines • Insufficient information to foster understanding toward the effects and risks of vaccines
3. Attitudes in the media and characteristics of the internet	• Biased reporting in the media (reporting meant to stir unrest) • Hoaxes, rumors, and conspiracy theories
4. Culture and perceptions	• Tendency to be easily influenced by surroundings (people may tend toward hesitancy if surrounded by people who are hesitant) • More attention being placed on side effects than effectiveness • Beliefs that vaccines are only for children • Tendency to downplay diseases

2.2.2. Results of individual hearings

Physician A

Vaccine hesitancy in the U.S.

- First, I will share my experiences as a pediatric infectious disease specialist (a clinician) in Los Angeles and San Diego in the U.S. There, vaccine hesitancy was becoming an issue from 2000 to 2008 (the period I served as an infectious disease specialist), but it was not discussed very often in Japan. Serving at the University of Southern California Medical Center (where I completed my residency in Los Angeles; please note that people without financial resources tend to be on Medicare), my impression was that vaccine hesitancy was not an issue or topic of discussion in the U.S. Most of the patients were immigrants from Mexico of Hispanic descent or immigrants from South American countries like Brazil or Puerto Rico. They had no money and could not afford the premiums for private insurance schemes, so they had to accept the care provided at the hospital. **When providing general medical care to people without insurance, patients had no room for doubt and readily accepted vaccinations, and I did not observe any hesitancy.**
  - On the topic of vaccines received by Hispanic people, they were able to receive healthcare by paying an out-of-pocket payment of $20, which is called a "copay." However, people who could not afford the copays could still receive vaccines for free at what is known in Japan as a public health center. (So, payment was not mandatory.) Their children could receive the vaccines recommended by the American Academy of Pediatrics. There are various types of insurance in the U.S., like Medicaid and Medicare. California also has its own type, called Medi-Cal. For example, a couple with three children and with an annual income of $12,000 or under would be eligible for free coverage from Medi-Cal. However, they would lose eligibility for having an annual income of $18,000. So, they would benefit by being extremely poor and lose out by earning more. The poorer they were, the more they could receive.
- On the other hand, people who purchase private insurance (through HMOs, PPOs, etc.) can receive the services they want. They choose their own family doctors (often a practitioner of family medicine) who provide them with vaccines. Hesitancy is encountered with a certain frequency among these groups. For example, in 2008, actor Jim Carrey led a march on Washington, D.C. over the belief that vaccines cause autism in children. For some people, hesitancy is particularly deep-seated. **There is an accelerating trend in society toward vaccine hesitancy led by people who are more knowledgeable or who have higher incomes.**
- I have heard that the tendency toward vaccine hesitancy is directly proportional to the average annual income in a community. For example, Marin county (which is north of San Francisco) has a high rate of vaccine hesitancy and a high average annual income of $70,000 to $80,000. A physician acquaintance in the area told me they are encountering difficulties (due to many people being vaccine hesitant). I think there is great variance in how often people are vaccine hesitant by region. As for whether people are making risk decisions with knowledge based on scientific evidence, **I think they are basing their beliefs on information they heard somewhere that they believe to be scientific (setting aside whether that information has been scientifically proven or not).**

Vaccine hesitancy in Japan

- **Over the course of actual clinical practice, I do not feel that there is much hesitancy.** Twice per month, I provide outpatient vaccinations at a clinic outside Niigata University, and almost 100% of them are administered according to the schedule established by the Japan Pediatric Society. There are sometimes parents who come to me and say (with completely blank maternity passbooks), "I was afraid of vaccines, but can we resume getting them?" In such cases, **they have been told "You should not get your child vaccinated" by a friend or their own parents**, but they say, "Even though my friends or family told me that, I saw positive news about vaccines later on, and then I read an article about it online and thought, 'It will be bad if we don't get vaccinated.'" That changes their minds and they start coming in. As for the people who stop coming, I am not sure why. If someone stops coming at all, it is currently impossible for us to follow up with them. In some cases, it is because they moved, but sometimes they stop coming in without saying anything.
- In many cases, they are stopped by their friends or family. **In the majority of cases, people are being influenced by their family and friends** who tell them things like, "I had a rough time with the side effects." Furthermore, **there are actually quite a few cases of hesitancy among health professionals** (even some physicians are also hesitant to get vaccinated).
- Regarding other factors for vaccine hesitancy – and hesitancy occurs due to a combination of various conditions – but

one that is currently present among voluntary vaccinations is **the problem of money**. Representative examples of such vaccinations are those for mumps (which costs 6,000 yen), influenza (which is two shots at 3,000 yen each). This could also be viewed from the perspective of "lack of convenience." The fact that vaccines cost money in Japan's unique system of voluntary vaccinations is a problem. It is safe to say vaccination rates are higher in municipalities that provide more subsidies. Although I do not know where the data is for this, **vaccination rates for rotavirus and hepatitis B (both of which were changed from voluntary to routine vaccinations) are higher in areas that provided subsidies**. Under the National Immunization Program (NIP) in the U.S., there are no cases in which those who are in the program have to pay a fee for vaccine A when vaccine B is free. Instead, by law, everyone in the program is eligible for both, free of charge, nationwide.

- Vaccine hesitancy is stronger in the U.S. than in Japan, but **in the U.S., the response is closer to refusal than hesitancy** (in which people do not vaccinate at all). Hesitancy is used to describe people who are uncertain, including those who get vaccinated but take their time to do so. **Under this definition, the hesitancy rate may be higher in Japan**. Fewer people in the U.S. are unsure than those who refuse completely. **According to the latest data from the World Health Organization (WHO), as much as 70% of people in Japan may be vaccine hesitant.**

Problems with immunization education

- I think there are quite a few cases in which even those who got vaccinated only did so after hesitating. **Immunization education in Japan is one factor.** There are various levels of education. This includes education for parents who have their children vaccinated and education for children. The level of education parents have received or the amount of studying completed by young parents can be covered in a few lines of text provided during middle and high school. Those lines would include descriptions of side effects but almost nothing on results. Parents and guardians receive almost no education. It is with that backdrop that textbooks are being given significant revisions this year. In the past decade or so, we have seen an increasing number of education programs on pregnancy and motherhood for expectant mothers, but mothers are too busy immediately before and after giving birth, making it very difficult for them to manage.
- **Healthcare providers learn almost nothing about vaccination during medical education.** They are taught about diseases like influenza, pneumococcus, and pertussis, but not how to administer vaccines, what to watch out for, or how to communicate the risks and benefits of vaccination to patients. When I served at St. Luke's Hospital, I only visited a vaccination site at a public health center in Chuo City once a week as an observer. There is not enough time being devoted to immunization education. As a result of this lack of education, health providers lack confidence. Not only are there no educational materials when they are students, there are also none available after they become pediatricians.
- I think **motivational interviewing will be an effective approach** to risk communication regarding vaccinations for hesitant individuals. The key to a motivational interview is interviewing people with hesitancy to identify points of contention and determining how to answer them. **They are not interviews to convince people to get vaccinated; the goal is to find out their reasons for not vaccinating and to identify how to respond to them. It is a method of interviewing that often results in the person being interviewed to shift toward vaccinating.** I think after vaccine hesitancy became a problem in the U.S., research was conducted and methods of talking to people and interviewing them were determined together with psychologists and other experts. If a physician says, "Today we are going to give your child three vaccines. They carry such-and-such risks and provide such-and-such benefits. Now, let's begin," then the parents might have some lingering concerns. Instead, the physician asks, "Is there anything you are concerned about? Do you have any questions?" And then respond if they do. Then, they explain the risks compared to the benefits. Finally, the vaccine is administered after the parents are convinced.
- (On the topic of prevaccination screening questionnaires similar to those used in Japan) There are no prevaccination screening questionnaires in the U.S. like those in Japan. Those sheets are hard to fill out, and they use nothing as irrational as that. Only a few physicians administer vaccines after closely reading prevaccination screening questionnaires. Another issue is that **in Japan, physicians' schedules are too full**. Physicians in the U.S. are less busy, both in terms of the number of physicians, but also in appointment times – they set aside twenty or thirty minutes per patient. There are never cases in which one physician has to see thirty or forty patients in an hour, like in Japan.
- When introducing motivational interviewing in Japan, when patients come for outpatient vaccinations, it may be a good idea to divide them into groups by age, for example, and explain the advantages and disadvantages of the vaccine each group plans to take. **It seems like it would be a good idea to confirm their concerns in advance and follow up with a final interview**. Providing explanations individually would take about ten minutes per person. It may also be

good to disseminate the bare minimum of information using videos or similar tools. The important things must be told to them ahead of time.

The influence of the media

- **The influence of the media is very important.** When health professionals with titles from academic institutions like Niigata University get involved and make outrageous remarks, those remarks get picked up by the media and can cause feelings of unease. **Face-to-face relationships with people who work in the media must be established.** For the past five or six years, whenever I give a presentation at my academic society, I always send a press release to the media to try to make sure they are reporting on the event after properly understanding the key points. This has resulted in a considerable decrease in reports like those I mentioned earlier, and we are now heading in a good direction. However, because many members of the press do not participate in the media seminars or read the press releases, there are still many news reports like that.
- On the topic of the influence of social networks, information spreading on Twitter can have significant influence. **While it is difficult for information regarding the positive effects of vaccinating to spread, the negative effects attract attention and spread easily.** There are many people sharing information about the dangers of vaccines and it is difficult to get them to stop. Some companies (like Twitter, Inc.) are reviewing methods for stopping them. Recently, such tweets are having warning statements included that say things like, "Please see here for more information on vaccines." As for the role of academia, we have no other options but to present proper amounts of science-based information in a manner that is easy to understand. **As Dr. David Southwell** (a top official for vaccines in the U.K.) **often says, trying to take on the anti-vaccine crowd by pointing out their scientific errors is like pouring fuel on a fire**. **It will be important for those of us in academia to present correct opinions. The Government will not listen to us about this topic at all.** Information with no scientific basis will eventually be forgotten, so we must wait for the storm to pass.

Accessibility

- Poor access to vaccination sites can also be a condition. If it is a one-hour drive away, there is the cost of gasoline, and the person has to take time out of their schedule to go. The U.S. is a car-oriented society, so people have to drive everywhere. However, vaccination sites in the U.S. are not designated like they are in Japan, and **people can even get vaccinated at drugstores**. **There are also major differences regarding what people have to submit when getting vaccinated. In Japan, people need to have vaccine vouchers, but in the U.S., all they need is their driver's license. In Japan, those sorts of things have to be done using the My Number system.** In the U.S., social security numbers are assigned to driver's licenses. I think vaccination information and other such information is stored using that. The same goes for taxes, deposits, and vaccinations. All the information is managed together using social security numbers.
- While physicians are not stationed at drugstores, they do have pharmacists and nurses who administer vaccines. **In the U.S., pharmacists can perform various medical procedures, and they are making great contributions to the COVID-19 vaccine rollout.** Regarding the activities of Japan's pharmacists, it is very difficult, because they do not perform medical procedures. The idea of having pharmacists administer COVID-19 vaccines was discussed in Japan but was not approved. It is difficult unless they have a license that allows them to perform medical procedures.
- As to whether accessibility issues can be addressed by having people present their driver's licenses, **Japan has well-developed public transportation, so it is relatively easy for people to get around**. Even people in rural areas have the options of getting around by bus or by driving and, geographically speaking, distances are shorter than in the U.S. People in the U.S. can be vaccinated immediately if they are close enough to a pharmacy. **Drive-through vaccinations are also available in the U.S. The U.S. had already paved the way for such systems for diseases like influenza, but Japan has no such groundwork.**

The situation surrounding adult vaccinations

- Most of the vaccinations for children are now being administered. While childhood vaccination rates are comparable to other countries, **there has been almost no talk of adult vaccinations**. There are no methods of communicating to the public information regarding topics like rubella vaccines and pertussis vaccines for adults, nor is it clear who should present that information. **The Expert Council on Promotion of Immunization** (a Japanese organization that unites 24 academic organizations) disseminates information that mostly goes ignored. The **Japan Primary Care Association** also presents vaccination schedules, but people tend to be too busy to follow them. Understanding from adults is crucial. The same can be said about members of the medical community. **While pediatricians take vaccination very seriously,**

physicians who treat adults are not thinking of vaccination as much.

Vaccines facing hesitancy-related problems

- **Human papillomavirus (HPV): Hesitancy is overwhelming.** Overblown media coverage was a significant factor that caused the Government to recategorize the vaccine as one that is recommended, rather than one that is actively recommended.
- **Mumps:** It is a live vaccine, so it irritates the meninges and often causes meningitis.
- **Influenza:** There is data that shows that people do not always get infected and it is easily misunderstood.

Physician B

Differences in hesitancy between Japan and the U.S.

- I have a question as to how to define "hesitancy." Is every case between the two ends of the entire spectrum from complete trust to refusal considered "hesitant," or is it only the extreme cases?
- In the U.S., there are many people in the "refusal" group, but **in Japan, the largest group is those who are "slightly uncertain."** One aspect of culture in the U.S. and Europe is for people to gather information on their own and express their own opinions based on their ways of thinking, their scientific literacy, and their education. In Japan, decisions are made according to the prevailing attitude, and the people in the middle shift to the left or the right when they feel uncertain. There is a clear split among left and right in the U.S. and Europe.
- Groups in the "refusal" category
- In terms of religion, the components of vaccines do not fit the tenets of Islam. There is also a group of believers in the U.S. Midwest called the Amish, who live traditional lives. There are also some leaders in the Middle East who are avoiding vaccination through exemptions.
- There is also a certain number of people in both the U.S. and in Japan who are inclined toward naturalism and organic products. They refuse to get vaccinated based on their own ideologies in which unnatural things are considered to be bad. There are even clinics and health professionals promoting this line of thought.
- There are groups in the U.S. that are firmly in the "refusal" category, but my impression is that there are not very many such groups in Japan. During my time at the National Center for Child Health and Development, I started an initiative in which I would talk with patients in the nighttime emergency room with blank vaccination columns in their maternity passbooks. I would say their ratio was about 1 in 1,000 people. Some were inclined toward natural medicine and other organic-based thinking, and there are some clinics in Setagaya and other places which support that. The reason they would come in at night was because of a sudden fever or similar ailment that caused them to feel worried.
- There were some people who had received their first doses of the HPV vaccine but were too scared to continue after the reports on it in the media. We tried to get those people to come in to see us at our clinic, but only about a third of them actually came to our outpatient clinic. **Many of those who came were highly-intelligent people.** While they were drawing various conclusions depending on the website they visited, by being honest with people about the risks of vaccines, there have been times when we convinced parents to get their children vaccinated, such as for measles. They said, "Let's try just that vaccine, then." When I said "highly intelligent," that was based on a feeling. You can learn a lot about people by talking to them. It is difficult to persuade people who lack literacy, and the people who do not come tend to be set in their thinking.
- On the topic of how I decided to get involved and talk to unvaccinated people, I heard from an emergency room physician that there was a certain number of unvaccinated people, so I said, "If you'll introduce them to me, I'll talk to them." That is how it began.

Interest in pediatric and adult vaccinations among health providers

- All pediatricians feel a sense of urgency about children who are unvaccinated, while only a few physicians are concerned about unvaccinated adults. It is safe to say it is a different story for the COVID-19 vaccines, though. **Basically, their interests are limited to what concerns their own clinical practice.** For example, if they are a geriatrician, they are interested in and feel a sense of urgency toward the pneumococcal vaccine, but not toward pediatric vaccines.

Other factors for hesitancy

- **Factors for hesitancy can be split into three broad categories: emotional issues, access issues, and money issues.** For vaccinations on the routine schedule, money is not an issue, but there are some people who do not want to take vaccines they have to pay for.
- Regarding these three factors, access in the U.S. is the result of poverty and similar factors. One item that is unique to Japan is that a medical checkup is provided at age 3 (in some municipalities, it is at age 5). In the U.S., though, children undergo annual checkups where they are vaccinated, and those checkups continue until age 18. Vaccine cards are updated when children begin school, and they cannot start school if they do not have them (unless the child has a qualifying exemption). In the U.S., vaccinations are a hurdle to school enrollment. The parents who dislike this are those that are inclined toward beliefs like naturalism, so there is a portion of the population with strong beliefs that choose to homeschool.

- **Vaccine coverage tends to drop off at around the age when children start school, or a little older.** Parents are very careful to get their babies vaccinated according to schedule until their children are around age 3, and vaccination rates are 98% to 99%. For vaccines given to school-aged children, certain ones like Japanese encephalitis and HPV have to be administered during school hours, so even if they have a clinic next door, **they end up not going to get them**. When they receive a vaccination notice from the city, parents think they cannot get their child vaccinated and end up letting it pass them by. It is a low priority for them. As a result, vaccination rates may be around 90%. Another aspect is that parents cannot maintain high levels of health consciousness as their children grow, and they do not want to let their children miss school after starting compulsory education. In other cases, both parents might be working and are unable to take their children to the doctor during the daytime. **People's lifestyles change after children start school.** Over the course of time, their vaccination notices disappear into their pile of paperwork, and they end up not getting their children vaccinated. I am unsure if that is hesitancy or just them being forgetful.
- I think there are almost no initiatives to follow up for such cases. Even if people miss their second dose of Japanese encephalitis vaccine or DT vaccine, they are not contacted. Regarding the topic of access, have you heard about the rubella vaccine? In the past, there was a period when only middle-school aged girls were receiving the rubella shot. So later, there was a rubella outbreak that started from middle-aged and older men who did not get the rubella shot during that period. An initiative to provide catch-up vaccinations to that group began two to three years ago that aims to recommend the rubella vaccine to people whose blood tests show no antibodies. Uptake is around 20% to 30% at local governments, and **even if people are encouraged to take time off work to get a blood test, they do not. Convenience-related problems like this are causing certain populations to go unvaccinated.**
- On the topic of insufficient knowledge, some people take vaccinations on the routine schedule but not voluntary vaccinations. It is like they are saying, "Mumps hurts but it only causes your face to swell up, doesn't it?" There are also people who start to regret not getting vaccinated when they are told their mumps-related hearing loss might be permanent. **Recommendations from family doctors can be the deciding factor that gets people to vaccinate.** People must not miss their window of opportunity to get vaccinated. People think that they will not get infected, or even if they do, they can just get cured. This sort of **shallow optimism is particularly common in Japan**, but may also be present in other countries, too.
- Another factor that can easily lead to hesitancy is **past experiences with vaccination**. Like, "I used to get the flu shot every year, but this time, my arm got all swollen," "I had the shot and got sick anyway," or "Nobody around me got sick." There is also a certain number of people who are concerned about the COVID-19 vaccine who think "The flu vaccine makes my arm swell up, so will it be safe for me to take the COVID-19 vaccine?" Many are experiencing hesitancy at the level where they say, "I will get vaccinated after everyone around me does it." Even some health professionals take the wait-and-see approach. The reaction varies from person to person, with some who are just a bit worried about side effects to those who are frozen in fear. If those around them get vaccinated and tell them it is safe, they feel okay to take the vaccine too, so some can be saved.
- While some say that confidence in vaccines in Japan is low, the COVID-19 vaccination rate has increased to around 80%. While it would be unfit to say that the roots of vaccine hesitancy in Japan are shallow, I feel that now is the time for us to implement more vigorous measures. The voices of vaccine skeptics are getting broad coverage. There is also the aspect that people are having trouble getting a feel for the good aspects of vaccinating because they think experiencing side effects will be the only thing that happens if they get vaccinated. They must be told that it is thanks to the vaccine.

Other hesitancy factors that require attention

- Generally speaking, the list covers all of the factors for hesitancy. One item that is especially important is **scientific literacy**. **People must learn how to think scientifically during childhood. I think this is impossible to teach adults.** Thinking scientifically is the methodology of formulating and testing hypotheses. I think the approach based on gathering results and thinking about them is rare in the educational system in Japan.
- **On the topic of accessibility, for adults, it will be important to offer convenient options like vaccinations at the workplace (as accessibility is the greatest challenge for adult vaccinations). For children, it will be important to create opportunities for annual checkups like in the U.S.** The periods people are free in the U.S. are usually determined by date of birth. Notifications like, "Time for your 16-year-old checkup" arrive. These cover topics like vaccines, sex education, sociopsychological issues (the home environment, school, club activities, boyfriends and girlfriends, sexually transmitted diseases, drugs, suicidal feelings, etc.). This type of preventive medicine must be enhanced in Japan, with these types of consultations being made free of charge until age 18.

- Regarding school vaccinations, historically, there have been periods that vaccinations were conducted in schools then later went away. This was due to reasons like hepatitis B outbreaks caused by syringes being reused during group vaccinations. Within schools, teachers have been quite unsupportive toward the idea of introducing vaccines. In addition, the idea to perform mass COVID-19 vaccinations in schools was abandoned due to problems like "ignoring the right to choose" or "peer pressure (among those who did and did not get vaccinated)." While there are ideas about introducing medical thinking to places that children can easily access (like school health offices), this will require drastic institutional reforms. In the U.S., these offices are sometimes staffed by physicians for a few hours each day, but in Japan, this is difficult due to problems related to jurisdiction (between the Ministry of Education, Culture, Sports, Science and Technology and the Ministry of Health, Labor and Welfare).
- The right to choose may also become an issue in the case of workplace vaccinations. It can depend on factors like the atmosphere at the company, like if they refuse entry to people who are unvaccinated.

Areas Physician B wants to focus on in the future

- **First, it is crucial that we grasp actual circumstances.** What **characteristics** are shared by people who feel vaccine hesitancy? What percentage of vaccine hesitant people does each group account for? Answering questions like these will make it clear where we should focus our efforts. It will be difficult to inject resources into fighting cases of refusal, so **the question will be how to win over people who are hesitant.** Honestly, I am unsure if the staunch refusers are few in number.
- Then, there is the topic of vaccine hesitancy in which healthcare providers are a factor. I have heard of cases in which their patients experienced adverse reactions, which caused rumors to spread and they lost their firm conviction to administer vaccines. For example, in cases where their patients experienced neurological problems after the HPV vaccine. This is a problem rooted in insufficient knowledge among healthcare providers, or when they do not know how to respond to such situations when they occur.

Reasons certain vaccines lead to hesitancy more easily than others

- HPV
  - Hesitancy toward the HPV vaccine occurred because of certain reports in the news. There were people who actually experienced ongoing troubles, but disbelief was stirred when those stories were denied. The media played a large role in this by providing repeated and extensive coverage of those stories. People tend to hold the people issuing recommendations accountable, but I think that should also be the case for people who make negative statements as well as for the media.
- Influenza
  - The vaccines themselves are relatively ineffective, and a single vaccine is used to target four strains of the virus. It prevents infections only about half as well as other vaccines, so it is a type of vaccine that offers very few benefits. Because it must be taken annually and can lead to fevers and other side effects, this decreases the incentives when viewing the entire situation.
- Mumps
  - The most important point is that the mumps vaccine is a voluntary vaccination. This can give people the impression that because of this, it is not so important. There is also room for improvement in terms of adverse reactions. The risk of meningitis is one out of 3,000 to 5,000 people vaccinated. If we started providing it to everyone as a routine vaccination, there would be a certain number of people who develop meningitis, so we are forced to only give it to those who agree after hearing about the risk-to-benefit ratio of the vaccine. There is also hesitancy among health providers.

Physician C

Physician C's involvement with vaccines

- **Vaccines are highly cost-effective.** Although pediatric medicine has particularly close involvement in this field, I wanted to work in international health. Pediatrics in Japan did not match international health, so I chose to specialize in tropical medicine. International health considers vaccine-based measures to be the most cost-effective health measures and they aim to save children first. That was how I developed a specialty in vaccines.
- My first encounters with vaccines came from the perspective of pre-travel vaccinations provided to people before traveling abroad, when I gave preventive consultations at a travel clinic. I was also involved in the Government's vaccination system at the MHLW, where I served in the Immunization Office for three years (and I remain a committee member for the MHLW). I also served as program manager of the pneumococcus program at Gavi, the Vaccine Alliance, where I helped run a one-year pneumococcal vaccination program in a developing country. Overseas, I have been closely involved in dealing with vaccines as an effective intervention method from a public health perspective.

Characteristics of vaccine hesitancy in Japan

- I think vaccine hesitancy is the result of compound factors. Japan is a racially homogenous country, but as we saw with COVID-19 vaccines in the U.S., there is wide variation in vaccination rates according to educational background, political alignment, race, and income (there is evidence in the literature for this).
- It has been scientifically proven that broad vaccine coverage is an effective national policy. The COVID-19 pandemic resulted in significant secondary and tertiary losses for society (such as economic losses due to restrictions on activities), so vaccine policies that can prevent these sorts of losses should be used as priority interventions.
- The U.S. adopted strong policies. The U.S. Government recently issued a mandate that obligated all companies with 100 or more employees starting with health providers, employees of the Ministry of Defense, and government officials to ensure their workers have been vaccinated twice by January 8. While the administration is pushing for this mandate, the public reaction has been strong. **The literature shows that vaccine mandates improve coverage. Such a mandate will get people who are stuck in the middle to vaccinate.** However, **this will have the side effect of resistance from those strongly opposed to the vaccine (especially the ones who would go so far as to lose their job to avoid taking it)**. I think they are taking measures with an eye on balance.
- Most of the people who develop severe cases of COVID-19 in Europe are unvaccinated. While policies barring entry for unvaccinated people (from places like restaurants and movie theaters) have been introduced by various countries including Germany, Austria, and Italy, demonstrations and other opposition measures have been growing more intense. In Belgium, there was even a case where protesters clashed with police, who had to deploy tear gas.
- I have the impression that there are no such divisions in Japan, and things are uniform. Maybe it is peer pressure, or perhaps it is in our roots as an island nation, but people prefer to do what everyone else is doing. There are not very many people who would rather die than get vaccinated. Japan has not had to resort to vaccine mandates. Even its COVID-19 policy does not say "Please stay home" or force people to stay home. For better or worse, it is uniform and lacks individuality. It does not have a culture where people must be assertive. Even without a vaccine mandate, Japan has achieved an 80% vaccination rate for COVID-19, which is high even among developed countries.
- The problem in Japan is paternalism, in which people obey their superiors. There is a culture in which people do not act according to their own decisions and do not take responsibility. People do as they are told or wait for instructions, and **if the system fails, everything fails. If the overall system does not fail, I think things work out well.** Japan has the capacity to mount responses in a uniform manner, so if the system works effectively without having to force people to do things, everything will move forward smoothly. It also has aspects that are clearly based on mistaken science that allows diseases like HPV, MMR, and Japanese encephalitis to go unchecked. In certain aspects, society as a whole lacks maturity and the ability to cleanse itself.
- Speaking of MMR, when there was a measles outbreak in the U.S., a doctor made statements in the media like, "If people get measles even when they are vaccinated, there is no point in vaccinating." They were slammed by the media and by other doctors, sued by the California Medical Association, and had their license revoked. It is very clear when one party is set against another and that some people are strange.
- In certain discussions on school mask mandates, some people put forth extreme arguments to assert their views, like saying that schools that implement mask mandates will be denied state funding. This makes it hard to mount a uniform response to the pandemic and to get results, even when the statements you are making are correct.

- In Japan, people just want to avoid responsibility. They think, "If everyone else gets vaccinated, then I will too," so **fostering the social atmosphere is more important. From an institutional perspective, the MHLW does not like taking actions that shine a negative light on them.** Even if a decision is not scientifically wrong, they do not want to have conflict. For example, they did not stand their ground when the media was reporting on the dangers of the HPV vaccine. They sometimes feel a pull from the media or from politics. They believe that results are satisfactory as long as no trouble has been caused. When they tried to re-introduce HPV vaccines, vaccine deniers and politicians joined hands, and even though a person in charge was making inaccurate statements, they ended up defining the atmosphere. In the end, making accurate statements does not lead to how society is shaped as a whole. Taking a long-term view of the situation, circumstances are improving. It is getting easier to obtain information. It is becoming easier for people to get the information they need through social networks and the media.
- Japan does not have an anti-vaccination movement like in Europe. The closest thing to it in Japan is the HPV vaccine victim's group, but that group is only concerned with HPV and not with all vaccines. In terms of the harmful effects of medicine, it is somewhat similar to the Ombudsman. Vaccine denier groups in Japan are cute in comparison. In the West, there are movements against vaccines as a whole. This causes various problems, particularly for MMR. There is a famous example of when a Hollywood actor spoke out against vaccines. There are two or three groups that are particularly influential in spreading anti-vaccine information on social networks.
- The WHO named vaccine hesitancy was named one of the top threats to global health in 2019. In the backdrop to this is the rise of populism, a trend in which countries prioritized what they wanted to do rather than what is best for everyone. Examples of such developments include Brexit, the Trump administration, and Italy. The biggest outbreak of measles in 2019 was in Samoa, which has had a low vaccination rate since 2013. After an infant was killed by a fake vaccine administered by a nurse, Samoa dropped measles vaccines from its routine vaccination schedule in 2018. This led to an outbreak that killed dozens of unvaccinated children. Even though vaccines provide a means to prevent outbreaks, failing to use them can lead to great losses, which led the WHO to name it one of the greatest threats to global health. This was how terms like "vaccine hesitancy" and "anti-vaxxer" came into use.
- Japan has different characteristics, where the threat comes from people not making decisions on their own and allowing themselves to go with the flow in overall society. There are countless examples of this. The recommendation for Japanese encephalitis vaccinations was withheld after cases of acute disseminated encephalomyelitis (ADEM). The theory spread that this was a result of propagating the virus in mouse brains. But, people cannot be saved if a causal relationship is not clearly established. Because they could not prove that there was no causal relationship, the recommendations were stopped in order to save patients. This is Japanese, but it is also humanistic. That decision led to a dramatic drop in the vaccination rate. Because most of the world's supply of the vaccine was being produced in Japan at the time, the supply was cut off to other countries, as well. The U.S. started producing the vaccine on its own and managed to develop a vaccine that did not use mouse brain cells. A similar situation occurred in 2011 surrounding inactivated poliovirus vaccine (IPV), because the live polio vaccine could cause polio in one person out of millions. When the media said, "The vaccine we have been using until now was dangerous," the vaccination rate dropped from 95% to 50%. It was even called "Russian roulette" in the news. That was the first time an expensive vaccine produced by an overseas company was approved and introduced in Japan despite few research findings, because Japan would be in trouble if there was a polio outbreak in the future. This could be called a successful result of lobbying efforts, but the Government was easily manipulated and this was not acting based on the nature of the issue. The Government was not moved to action based on its own thinking and quantitative evaluation. We can see how there is an aspect of politics that requires them to keep an eye on trends in society.
- Fake news and infodemics are spreading on social networks, and some people believe everything they see. One lesson we learned from COVID-19 is that it will be necessary to design systems around the ideal methods of providing appropriate information. Misinformation must be identified quickly and isolated, and accurate information must be provided. However, I also have the impression that the percentage of people who are convinced is not as large as it appears.

Characteristics of vaccine hesitant people

- There are many characteristics shared by vaccine hesitant people, like political alignment, **educational background** (as is likely the case in Japan), and **income** in the U.S., and **tendencies toward naturalism** in Japan (where appreciation of nature is common among highly-educated women). There is no definitive characteristic shared among vaccine deniers. I also gave a lecture on this topic to students today (from *Morbidity and Mortality Weekly Report*, MMWR). Although

their percentage is small, some people are influenced by various factors that cause them to focus on problems without seeing the entire picture, and that is a problem.

- Another characteristic of anti-vaxxers is that **they rely on anecdotal methods that appeal to emotions (pity, fear, etc.) to provide information**. **This causes the problem that they attract people in the gray zone**. In one case, in China, a mother was told by her friend to avoid the rabies vaccine because she developed paralysis in her lower body after getting vaccinated for rabies. While it is true that fake vaccines were being spread, vaccines usually do not result in lower body paralysis. We do not know the source of that information and it cannot be confirmed. **Sensational information spreads easily because people share it with good intentions, even when that information cannot be confirmed.**
- When it comes to the COVID-19 vaccines, there is no tendency toward hesitancy among people with higher educational backgrounds. However, there is data that shows a tendency for strong hesitancy among some highly-educated women for particular vaccines, like the HPV vaccine. For mothers with strong naturalist tendencies who believe in letting their kids get dirty, this is an extension of their attitudes toward eliminating impurities. **When considering overall levels of hesitancy, it is weaker among people who have more knowledge or who have higher incomes.** This is because they can assess information in an objective and quantitative manner. **The more willing to obey orders a person is, the less effective they are at judging whether information is correct or not.** There is no vaccine that only provides benefits. While it is necessary to assess the overall balance between the risks and rewards of vaccinating – for example, if one may develop a severe case and inconvenience those around them by going unvaccinated, or if vaccinating grants protection but causes one to have a short-term fever – but **the more subjective a person is, the more they tend to place too much focus on single bits of information**. It is easier for people to evaluate information in a more quantitatively-balanced manner if they gather it from broad resources. And, it is easier for people who can evaluate information in a more objective manner from various angles to make scientifically accurate decisions. Half of this is the aspect of training. People with higher educational backgrounds tend to be better at absorbing and understanding information as well as evaluating its overall balance.
- While most people in Japan tend to be influenced by their surroundings, it is also safe to say that it is easier to get people with higher educational backgrounds to vaccinate. One characteristic of Japanese people is that they tend to be poor at thinking about things on their own and making their own decisions. The impact of trends and currents in society is significant. However, responses from the Government and the media tend to get close attention and criticism, and it is safe to say the choice to do that is made by the public. Overall, the level of maturity in Japan is low. Vaccination rates can be taken as a sign of social consensus on what is acceptable and what is not.
- A response that is tailored to the characteristics of the country is necessary. For example, establishing a prevailing attitude in Japan that allows everyone to get vaccinated. Like when government officials gave a performance during which they ate Japanese radishes at a time white radish sprouts were suspected of being the cause of the O-157 food poisoning outbreak, people in positions of authority should take the lead in providing information. President Biden has clearly stated his support of vaccination, but nobody steps up to take responsibility in Japan. Sometimes the fact that someone is willing to show their stance can make them more trustworthy. **It is important for the Government to provide leadership in communicating easy-to-understand information.** If they do not, people will make decisions in line with the prevailing attitudes in their surroundings.
- It will also be important to help society mature. Key stakeholders in this include politicians, health professionals, and the media. **The literature shows recommendations from healthcare professionals are effective at changing behaviors.** One paper reported only about 15% of people will get an influenza vaccine if nothing is said to them, while 40% will do so if provided with a clear recommendation from a healthcare professional, and 70% will do so if told they can be provided with a vaccine on the spot. **There are smaller, personal approaches that can be used instead of mass approaches.** Educate healthcare professionals. This will require strategies to approach healthcare professionals and the media through training programs and other opportunities (although doing so will not have immediate results). Doing so on a continuous basis will help create overall change from the bottom up.

Approaches from the Government

- Regarding vaccine hesitancy issues that the Government is moving to address, I think they do not perceive vaccine hesitancy as something that is having a significant impact and causing problems overall. Vaccination rates for infants are over 95%. Issues related to ethnic backgrounds or religion, like with the Amish community in the U.S., are not present in Japan. While Japan has seen some examples of hesitancy among naturalists, those cases have been sporadic and are

not being considered at the policy level. The Government is more averse to having these issues be politicized by specific groups, like what occurred with the HPV vaccine. They may be keeping an eye out for the people with the loudest voices, on a personal basis, in order to prevent them from setting trends that will sweep up others. **I am unsure if the Government's goals include the health of the public as an outcome. Administrative work is based on losing points, and that results in them maintaining a "play it safe" approach. They do not look ahead five or ten years in the future while they work. Rather, they are focused on getting their current department to work now. This means vaccine hesitancy is not a high priority in terms of policy.** Even if they do make efforts like involving communication specialists to provide easy-to-understand information, the nature of the Government will not change – it will avoid doing anything that makes waves.

- I think as globalization continues to spread in Japan, the gaps between countries will continue to shrink. Given these circumstances, Japan cannot remain on its own path. **The spread of fake news and misinformation has become a problem in Europe and the U.S. and could become a problem in Japan as well**, so even if we cannot take immediate action on that, we should have the foresight to fix what we can.
- In terms of national policy, vaccinating as many people as possible, as quickly as possible, is in the national interest. **Although a vaccine mandate seems unlikely in Japan**, today, a nurse told me, "Even doctors are not getting vaccinated." They are difficult to approach, which is a lingering challenge. That does not mean we should leave them be just because their societal impact is small. Rather, such issues should be solved one by one. Everyone likes to do things with collective responsibility. Strong criticism from outspoken people wrecks the social atmosphere. I think that the Government is concerned about the **impact of having the people with the loudest voices complain after control is tightened. In political terms, this means they have to agree with people when they say something that is scientifically correct is not actually "correct." In science, it is basically best to say what is "correct" or "incorrect," but the actions taken by elected politicians have to reflect the will of the public.** It is important for the public to be made to understand when something is wrong. This is why I think it is currently important for health professionals to work to address this on an everyday basis.

Physician D

The characteristics of vaccine hesitancy in Japan and methods of approaching it

- Overseas, there is a high percentage of people who will refuse vaccines no matter what, or have strong feelings against them. In Japan, the percentage of people who outwardly display such attitudes for others to see is small. However, we cannot ignore such people who have strong feelings of hesitancy. **Many people in Japan are easily influenced by others.** They are likely to say things like "I know someone who said such-and-such," and they tend to shift their stance or follow suit. There are concerns that the appropriate methods are not used to approach those who have strong feelings of hesitancy, their thinking will spread to those who do not feel so strongly and that the hesitancy will expand rapidly after that group reaches a critical mass.
- Rather than approaching people on the individual level, it will be important to establish systems that help everyone take in accurate information. Utilizing an oppressive approach toward the hesitant group will have the opposite effect. Efforts should be made to continuously distribute accurate information to the people who can make the right choices when provided with it.
- Among my outpatients, there are some people who say, "I've decided not to get the vaccine," or "I'll go with the DPT vaccine over the DPT-IPV vaccine" based on what they heard in their mom circle or on the internet. They are making decisions based on the information they can access. There are also some people with children in their late teens who say, "I was wrong not to get my child vaccinated." They say they were influenced by information being shared around them, and they learn to recognize their mistake because they can now access correct information. While we have seen the internet develop, the most trustworthy source of information is the word of healthcare professionals (and family doctors, in particular). If there are no vaccination records in someone's maternity passbook, steps should be taken to reach out to them repeatedly. Other factors that will lead to correct decision-making are doubling and tripling up on these efforts, such as further developing online resources or disseminating information from the Government.
- Rather than providing information on an individual basis to people with strong vaccine hesitancy, it will be important to provide correct information from various angles. If there is a chance to do so, it is also good to provide the information directly. While the questionnaire conducted among vaccinated and unvaccinated women by Professor Sadao Suzuki of Meiji University as part of the Nagoya Study earned high global recognition, it received almost no coverage in the media. We should take full advantage of opportunities to share the fact that impartial information is available. Papers providing such information on the HPV vaccine are rare. The survey conducted by the MHLW only followed up with people who had been diagnosed, but no study was conducted in Japan to follow up with both people who had symptoms and people who did not. There are people who share what is in the literature while distorting its content (such as by adjusting ages to ensure anonymity, which is the correct approach in science) with people in the hesitant group. When that information is incorrect, they must be told it is wrong.
- Many deaths in Africa and developing countries are caused by infectious disease, and people have no need to be hesitant toward using the tools that are available because they lack other resources. If vaccines are provided in urban areas, people will come from rural areas to receive them. Their Governments also conduct vaccination campaigns in rural areas. Because these are more like projects from the UN rather than Government initiatives, the UN pays for everything regardless of the country, even logistics. As such, there has been almost no hesitancy.
- The public also supports practitioners of traditional medicine (witch doctors, etc.), so if you do not get along with people like that, the entire country will shift toward hesitancy. This is the situation in Namibia, where the COVID-19 vaccination rate is poor. When HIV was prevalent in South Africa, there were stories circulated saying condoms are a form of Western influence. In countries like that, it is difficult to make progress without first winning over actors like local influencers and practitioners of traditional medicine.
- It is highly likely that the more ambiguous the risk of an infectious disease or the effectiveness of a vaccine effectiveness, the easier it is for people to tend to be hesitant. Most of the parents who want to change from the DPT-IPV vaccine to the DPT vaccine say, "Because there is no polio in Japan." But there is always the risk that the virus is imported from overseas (from countries like Afghanistan, because vaccine-derived poliovirus emerges from time to time overseas). The same applies to chickenpox and mumps.
- Regarding how to provide correct information, **it is best for people to be able to receive correct information as easily as possible. People will feel less hesitant toward vaccines if information is readily available over the course of daily life (such as through advertisements in buses and trains).** I think advertising regulations may hinder efforts to provide that kind of information, and I would like for those regulations to be relaxed.

Improving the environment to create vaccination opportunities

- Currently, people only have opportunities to get vaccinated at health institutions and other institutions that submit notifications, but **it will be important to establish an environment in which working adults (and adults raising children and other busy people) can get vaccinated.** It will be important to make it so parents raising children can get vaccinated during outings. It is likely the vaccination rate will change if vaccination sites are expanded to include places other than health institutions, like supermarkets and drugstores.
- Expanding vaccination sites in Japan would require that many more physicians, so it would be more practical to allow more health professionals to administer vaccines. During the COVID-19 rollout, the professionals who could administer vaccines were expanded to include dentists, clinical laboratory technicians, and paramedics. I would like that to be further expanded to include pharmacists. Nurses cannot administer them alone because it would mean physicians would not check prevaccination screening questionnaires, but it would be possible to create a specialized position among nurses (namely, nurse practitioners) that could administer vaccines. On the topic of nurses, some people are certified to work as nurses but are not serving as nurses, so it may be possible to employ them on a part-time basis (such as by issuing certifications after they complete a certain amount of education or training). One hurdle is that the times vaccines are provided do not line up for working adults.

Reasons that approaches for adult vaccinations are needed

- **We need methods to approach adults because the number of vaccines they need to take is increasing.** In addition to vaccines that have already been available, like the influenza and pneumococcal vaccines, there is now a shingles vaccine for people age 50 and over.
- There are also vaccines that were not administered when people who are adults today were young (which policy now recognizes as essential). The number of doses given for measles-rubella was increased from one to two in 2006. (Because measles disappeared and the virus no longer entered people's bodies, they were unable to maintain immunity. It became impossible for people to maintain long-term immunity without two doses.) Although steps have been taken for the fifth round of routine rubella vaccinations (for those born between 1962 and 1979), younger generations have also been placed at risk and will require a second round of rubella vaccinations. For tetanus, those born in 1968 or before were unable to be vaccinated as it was not on the routine vaccination schedule at the time. (This mostly affects elderly people. There are ten to twenty cases annually.) In other countries, people are recommended to take the tetanus vaccine once every ten years as a routine vaccination. There is growing momentum for ensuring adults are protected against VPDs.

Costs

- **Vaccines should be available at prices anyone can afford, and if possible, for free.** People with enough money can get as many vaccines as they want, as something like shingles is 20,000 yen per dose. But, ordinary households waver when they see the price, and think things like, "I do not need it if the disease will not kill me," or, "We can't spend money on a vaccine for a disease we might not develop." I want people to take preventive action because of the risks or burdensome medical costs that come with getting sick. I want vaccines to be priced so even lower-income households can consider them. Even for pediatric vaccines, there are some parents who say, "I won't get it if it isn't free" (for rotavirus vaccine, in particular).
- It would be enough if they paid 500 yen or even 100 yen out of gratitude. Everyone is in the same boat when it comes to infectious diseases; if there is an outbreak somewhere, it is possible you will get infected, and it is also possible you might infect someone else. If people who cannot afford vaccines get infected, then diseases spread to people who do have money, so we cannot feel safe unless the entire population is vaccinated.
- Some have said if vaccination rates for COVID-19 had reached 90% in South Africa, it may have prevented mutated strains from emerging. Japan adopted the German method of vaccinating only girls for rubella out of the belief that if pregnant women do not catch rubella, it will prevent congenital rubella syndrome. However, rubella spread to pregnant women after an outbreak among men in their 30s to 50s, resulting in cases in which children are being born with congenital rubella syndrome. **The more narrow the target population, the harder it is to ensure herd immunity, so it is important to immunize the population.**

Regarding mandates

- It is difficult to make vaccinations mandatory, so I think we should not revert to doing so. It is difficult, in social terms, unless the person getting vaccinated or their guardian has been convinced. While doing so would make things much easier in terms of infectious disease control, the various symptoms caused by vaccinations cannot be ignored. Rather, it is important to make vaccinations free, like those on the routine vaccination schedule; to create an environment that facilitates vaccination; and to thoroughly provide information to build understanding. If vaccinations become mandatory and there are adverse reactions and other future impacts, the Government might get sued, and there may be increased concerns regarding concealment. Such a society would not be very fair.
- Even if adverse reactions do occur, people will feel differently about them if they were convinced to get vaccinated. **Another concern is that making vaccines mandatory may result in discrimination toward those who do not get vaccinated.** The world will be a difficult place to live for people who cannot produce medical proof that they do not need a vaccination or that simply do not want to vaccinate. Laws on vaccination state that individuals are "obligated to endeavor" to be vaccinated, so the question of whether to vaccinate ultimately comes down to individual responsibility.
- **It is okay to establish different standards for life-threatening diseases.** There are many varieties of VPDs, and some have high mortality rates while others do not. It is okay to consider mandates according to the characteristics of the disease. Right now, individuals are "obligated to endeavor" to vaccinate for life-threatening diseases as well, so we have stopped at routine vaccinations.

Vaccine hesitancy among health professionals

- I think vaccine hesitancy among health professionals is a problem. **Physicians are included in the group of people who are supposed to draw in the vaccine hesitant crowd. In a sense, it is criminal to lead people along with an incorrect interpretation of the information (although I don't know if it is okay to go so far as to call it that).** The difficult thing about vaccinations is that it is hard to tell if someone got infected with a disease after getting a vaccine or if they did so without getting a vaccine, but if someone has lingering complications or other problems after not vaccinating, the responsibility rests with the physician who led them astray with wrong information.
- Three or four years ago, there was an outbreak of measles in Mie Prefecture. It occurred among a group of vaccine-hesitant naturalists in their teens and twenties who were living together. Their religious cult posted an apology online for "misinterpreting the information." While it is easy for people to speak up when they are fine after not getting a vaccine, it is difficult to do so for people who experience lingering complications. There may be cases that are hidden.
- I do not think people often pursue who is responsible when misinformation is disseminated. In the health sector, once someone has their certification, staying up-to-date on information is up to them. Specialists need to update their knowledge by attending academic conferences and by pursuing other educational opportunities, but if specialists do not need to renew their certifications, they can present themselves as physicians as long as they possess a national medical license and share any information they want to, without issue.
- There was a problem regarding major measles outbreaks after vaccination rates fell as a result of an article published in the U.K. by Dr. Andrew Lakefield that linked the Measles-Mumps-Rubella (MMR) vaccine with autism. Later, that article was found to be fabricated and it was withdrawn by the journal that published it. There was a trial and Dr. Lakefield's license was revoked. He then moved to the U.S. If there is a major event, then actions are sometimes taken to pursue who was responsible.
- Physicians must update their information. We must establish a system like the one in the U.S. to make physicians take an exam every ten years to renew their licenses or to receive training.

Educating health providers

- Vaccines are only covered for an hour or two during lectures on pediatric medicine, and healthcare professionals almost never administer vaccines, even at university hospitals. Medical school graduates go to serve at city hospitals without almost ever having administered vaccines at university hospitals. There are also hospitals that do not handle vaccines. There are almost no opportunities to receive a proper education on vaccines. However, because vaccines can result in adverse events, it is necessary to have systems and tools to educate and train people on disease characteristics, vaccine effects, and side effects.
- I think this lack of learning opportunities is something that is unique to Japan. Doctors in the U.S. are provided with opportunities to learn about vaccines during clinical training, and in U.S., U.K., Europe, there are courses offered by academic societies for each healthcare profession. For Japan, it would be best if this training was provided by medical

associations. Medical associations are organizations with many clinicians. Local governments commission medical associations to conduct routine vaccinations, and medical associations recommission them to their members. It is vital that physicians at medical associations build knowledge and awareness. It is also important for medical associations to disseminate information. I think it would be best if physicians affiliated with university hospitals that are unrelated to medical associations were provided with opportunities to also receive that information.

- So, what are the reasons for this lack of learning opportunities? There is no course for learning about vaccines during clinical training. Students at medical schools in Japan learn by organ (pediatrics, dermatology, internal medicine, etc.) and are taught about vaccines in immunology. Immunology is a basic subject that they study in years two to three, and there is no basic course on immunology included during clinical training in years four through six. Vaccines are sometimes covered at universities with general medicine departments or regional placement programs, or during courses on preventive medicine, but that is about it. They are currently updating the curriculum which was first created during the Showa era (which ended in 1989). Since the curriculum has not changed since a time when there were only about five types of vaccines, it will be necessary to incorporate vaccine theory and administration into the medical school curriculum. Creating curriculums is the responsibility of the Ministry of Education, Culture, Sports, Science and Technology, while clinical training is under the jurisdiction of the MHLW. Clinical training does not provide adequate coverage of vaccine basics and administration of vaccines, so physicians only really have classroom learning on these subjects.

The impact of COVID-19 on vaccinations

- Up until now, members of the general public have viewed vaccines as something for children. Now that vaccines have become something that is also given to adults, people see vaccines as something that concerns them. People have more opportunities to think about vaccines. A segment of the population that realized they are hesitant about vaccines has also surfaced. Finding ways to approach adults has been left over as homework.
- Information must be provided effectively. This means opening up various channels that can be used to provide information, like LINE and social networks. Overseas, this is being done using sites like Facebook and YouTube. Workplace vaccinations have also been well-received. It is very important for companies to socially protect their own employees. They will also help prevent the spread of rubella from men to women in companies through the fifth round of rubella vaccinations. It would be good if companies also participated in vaccination schemes. If provided with the right information, there are many people who will get the proper vaccines. The key points to cover in that information are: (1) what kind of disease the vaccine targets (and its health risks); (2) the vaccine's effectiveness; and (3) the risk of side effects for the vaccine (and any relief systems that may be available).

3. Marketing Research Online Community (MROC)

3.1. Survey overview

Objectives	To recruit a target group consisting mainly of people who express negative attitudes or doubt toward vaccines, to discuss each person's values and attitudes toward vaccines, and to gather their responses to questions. In addition, through anonymous mutual exchanges with other target group members, to identify examples of unexpected hesitancy factors that were not mentioned during the expert hearings.
Period MROC was established	From November 7, 2021 to December 20, 2021
Venue	MROC Platform
Target audience	A total of 42 men and women residing in Japan and of age 18 or over *For respondent details, see Figure 3-1: List of Participants
Questions	Open questions (6 questions) and Questionnaire (3 questions) *For details regarding questions, see Figure 3-2: List of Questions. *Questionnaire results are attached separately.

Figure 3-1: Participant Details

Sex	Age	Location of residence (Prefecture, City, City Status)			Marriage status	Raising children	Family size	Occupation	Industry	Educational background	Annual personal income	Annual household income
Female	19	Hiroshima	Mihara	Other municipality	Married	No	1	University or graduate student	(No response)	Four-year university	Less than 1 million yen	Less than 1 million yen
Female	27	Aichi	Gamagori	Other municipality	Unmarried	No	5 or more	Full-time (Professional staff)	Finance/Insurance	Four-year university	4 million yen to 4.99 million yen	4 million yen to 4.99 million yen
Male	28	Saitama	Fujimino	Other municipality	Married	Yes	3	Full-time (Professional staff)	Real estate and rental services	High school	4 million yen to 4.99 million yen	4 million yen to 4.99 million yen
Male	28	Hyogo	Amagasaki	Other municipality	Unmarried	No	1	Full-time (General staff)	Utilities	Graduate school	5 million yen to 5.99 million yen	5 million yen to 5.99 million yen
Male	29	Saga	Imari	Other municipality	Unmarried	No	4	Part-time	Other manufacturing	High school	1 million yen to 1.99 million yen	6 million yen to 6.99 million yen
Male	30	Tokyo	Akiruno	Other municipality	Married	Yes	3	Full-time (General staff)	Medical and welfare	Four-year university	4 million yen to 4.99 million yen	5 million yen to 5.99 million yen
Male	31	Aichi	Toyoake	Other municipality	Unmarried	No	1	Civil servant (other than teacher)	Other service	Four-year university	4 million yen to 4.99 million yen	4 million yen to 4.99 million yen
Female	31	Fukuoka	Fukuoka	City designated by Government ordinance	Married	No	2	Contract or dispatch	Other service	Four-year university	3 million yen to 3.99 million yen	8 million yen to 8.99 million yen
Female	32	Tokyo	Shibuya	Special Ward (Tokyo 23 wards)	Unmarried	No	1	Health professional	Medical and welfare	Four-year university	5 million yen to 5.99 million yen	5 million yen to 5.99 million yen
Female	32	Saitama	Koshigaya	Other municipality	Married	Yes	4	Full-time homemaker	(No response)	Four-year university	Less than 1 million yen	20 million yen or more
Female	32	Hyogo	Kobe	City designated by Government ordinance	Married	Yes	3	Part-time	Wholesale or retail	Vocational school	1 million yen to 1.99 million yen	6 million yen to 6.99 million yen
Male	37	Osaka	Osaka	City designated by Government ordinance	Married	No	2	Self-employed	Transportation or postal	Four-year university	3 million yen to 3.99 million yen	9 million yen to 9.99 million yen
Male	37	Tokyo	Adachi	Special Ward	Unmarried	No	3	Full-time (General	Information	Four-year university	5 million yen to	5 million yen to 5.99

				(Tokyo 23 wards)				staff)	services		5.99 million yen	million yen
Male	37	Hokkaido	Sapporo	City designated by Government ordinance	Married	No	5 or more	Health professional	Medical and welfare	Vocational school	4 million yen to 4.99 million yen	4 million yen to 4.99 million yen
Female	39	Kanagawa	Kawasaki	City designated by Government ordinance	Married	Yes	4	Full-time (Professional staff)	Education or learning support	Four-year university	8 million yen to 8.99 million yen	15 million yen to 19.99 million yen
Female	41	Hyogo	Itami	Other municipality	Married	Yes	5	Full-time (Professional staff)	Medical and welfare	Junior college	2 million yen to 2.99 million yen	8 million yen to 8.99 million yen
Female	41	Toyama	Imizu	Other municipality	Married	Yes	4	Full-time (General staff)	Wholesale or retail	Four-year university	2 million yen to 2.99 million yen	5 million yen to 5.99 million yen
Female	41	Miyazaki	Nobeoka	Other municipality	Unmarried	No	1	Civil servant (other than teacher)	Other service	Four-year university	5 million yen to 5.99 million yen	5 million yen to 5.99 million yen
Female	41	Hokkaido	Niseko	Other municipality	Unmarried	No	1	Full-time (General staff)	Lodging or food services	Four-year university	Do not know	Do not know
Male	46	Aichi	Nagoya	City designated by Government ordinance	Married	No	2	Full-time (General staff)	Transportation or postal	High school	4 million yen to 4.99 million yen	9 million yen to 9.99 million yen
Female	47	Saitama	Asaka	Other municipality	Married	Yes	3	Full-time homemaker	(No response)	Four-year university	Less than 1 million yen	7 million yen to 7.99 million yen
Female	47	Tochigi	Utunomiya	Other municipality	Married	Yes	4	Full-time homemaker	(No response)	Four-year university	Less than 1 million yen	10 million yen to 14.99 million yen
Female	48	Tokyo	Koto	Special Ward (Tokyo 23 wards)	Married	Yes	5 or more	Full-time homemaker	(No response)	Junior college	Less than 1 million yen	8 million yen to 8.99 million yen
Male	48	Tokyo	Itabashi	Special Ward (Tokyo 23 wards)	Married	Yes	1	Full-time (Professional staff)	Wholesale or retail	Four-year university	5 million yen to 5.99 million yen	7 million yen to 7.99 million yen
Male	50	Osaka	Yao	Other municipality	Married	No	2	Full-time (Professional staff)	Finance/Insurance	Four-year university	5 million yen to 5.99 million yen	6 million yen to 6.99 million yen
Male	50	Tokyo	Chiyoda	Special Ward (Tokyo 23 wards)	Married	Yes	2	Full-time (Professional staff)	Medical and welfare	Four-year university	10 million yen or more	10 million yen to 14.99 million yen
Female	51	Osaka	Kawach	Other	Married	Yes	4	Full-time	(No	Vocational	Less than	7 million

			inagano	municipality				homemaker	response)	school	1 million yen	yen to 7.99 million yen
Male	55	Gunma	Maebashi	Other municipality	Married	Yes	4	Teacher	Education or learning support	Graduate school	7 million yen to 7.99 million yen	7 million yen to 7.99 million yen
Male	57	Hokkaido	Bibai	Other municipality	Married	Yes	3	Full-time (Professional staff)	Transportation or postal	Vocational school	3 million yen to 3.99 million yen	3 million yen to 3.99 million yen
Male	57	Nara	Miyake	Other municipality	Unmarried	No	3	Contract or dispatch	Other manufacturing	Vocational school	3 million yen to 3.99 million yen	7 million yen to 7.99 million yen
Female	60	Ishikawa	Hakusan	Other municipality	Married	Yes	2	Full-time homemaker	(No response)	Vocational school	Less than 1 million yen	3 million yen to 3.99 million yen
Male	60	Fukuoka	Munakata	Other municipality	Married	Yes	2	Full-time (General staff)	Lifestyle-related services or entertainment	Four-year university	10 million yen or more	10 million yen to 14.99 million yen
Female	60	Chiba	Sakura	Other municipality	Married	Yes	2	Full-time homemaker	(No response)	Four-year university	Less than 1 million yen	9 million yen to 9.99 million yen
Female	61	Tokyo	Machida	Special Ward (Tokyo 23 wards)	Married	Yes	3	Full-time homemaker	(No response)	Junior college	Less than 1 million yen	Do not know
Female	61	Kyoto	Kyotanabe	Other municipality	Married	Yes	3	Part-time	Other service	Four-year university	2 million yen to 2.99 million yen	2 million yen to 2.99 million yen
Male	62	Saitama	Wako	Other municipality	Married	Yes	3	Full-time (Professional staff)	Other service	Four-year university	4 million yen to 4.99 million yen	4 million yen to 4.99 million yen
Female	64	Kochi	Nankoku	Other municipality	Married	Yes	4	Full-time homemaker	(No response)	Four-year university	1 million yen to 1.99 million yen	Do not know
Female	65	Kyoto	Kyoto	City designated by Government ordinance	Married	Yes	2	Health professional	Medical and welfare	Vocational school	1 million yen to 1.99 million yen	3 million yen to 3.99 million yen
Male	69	Osaka	Neyagawa	Other municipality	Married	Yes	2	Retired (compulsory)	(No response)	Four-year university	2 million yen to 2.99 million yen	3 million yen to 3.99 million yen
Female	74	Tokyo	Nishitokyo	Other municipality	Married	Yes	3	Full-time homemaker	(No response)	High school	Less than 1 million yen	9 million yen to 9.99 million yen
Male	75	Saitama	Saitama	City designated by	Married	Yes	2	Self-employed	Information services	Four-year university	5 million yen to 5.99	5 million yen to 5.99 million yen

				Government ordinance							million yen	
Male	76	Tokyo	Tama	Other municipality	Married	Yes	5 or more	Self-employed	Other service	Four-year university	5 million yen to 5.99 million yen	10 million yen to 14.99 million yen

Figure 3-2: List of questions

Question title	Question content (excerpts)
Item 1: Self-introductions	Let's start by having everyone introduce themselves!
Item 2: Feelings of hesitancy toward vaccination around you	Is there anyone around you who has expressed hesitation toward vaccinating, or has refused to vaccinate? What is their relationship to you? Please tell us as much as you can remember about that incident, such as if there was a specific vaccine, why they were hesitant or refused, or how you felt about their attitude.
Item 3: Feelings of hesitancy toward taking a vaccine or having one's children vaccinated	Please tell us about your experiences with vaccinations (including those given to your children). Have you ever felt hesitant toward or refused to vaccinate? If so, please tell us everything you can recall about those episodes, including the following key points. ■ Key points: When it was, who the vaccine was for, which vaccine it was (if there was a specific vaccine), what reasons made you feel hesitant,* how strong your feelings of hesitancy were (in your own words; were you a little hesitant, did you refuse, etc.), did you end up taking the vaccine in the end, how you feel about your decision in retrospect *Please try to recall how you felt at the time and explain your reasons in as much detail as possible. For example, instead of thinking "Because it cost money," share information like why you did not want to pay for it, how much you feel it should have cost, or how you felt about the cost in terms of other expenses.
Item 4: Problems and solutions regarding vaccinations – 1. Access, cost, etc.	Have you ever felt a vaccination was inconvenient or questionable due to aspects like access or cost?
Item 5: Problems and solutions related to vaccinations – 2. Gathering information	(1) Have you ever gathered information on vaccines from the media (TV, etc.) or the internet? (2) Have you ever gathered information from or consulted your family, friends, acquaintances, or family doctor about vaccines? If you said "Yes" to (1) or (2), please share specifics about an episode in which you encountered a lack of information, had difficulty understanding information, or had trouble making decisions based on the information you had. Also, how did you solve these problems? If you were not able to solve them, please consider what kind of information could have helped you, who could have provided it, and what kinds of support you would have liked to receive.
Item 6: Looking back on MROC activities	Looking back at posts and comments on this subject from yourself and from others, have you experienced any changes in your attitude or awareness toward vaccines? If so, please tell

	us what kind of changes occurred, as well as how and why. If you have experienced little or no change, please also share why.
Questionnaire, item 1: Request for basic personal information	Please share your basic personal information so we can evaluate the activities of this community.
Questionnaire, item 2: The degree of influence of factors causing hesitancy toward vaccines (for vaccines people take themselves)	If there have been any factors that caused you to experience hesitancy toward a vaccination for yourself, please describe the degree of influence those factors had on you.
Questionnaire, item 3: The degree of influence of factors causing hesitancy toward vaccines (for vaccines people give to their children)	If there have been any factors that caused you to experience hesitancy toward a vaccination for your child, please describe the degree of influence those factors had on you.

3.2. Survey results

3.2.1. Summary

People tended to be more hesitant toward individual vaccines than vaccines in general
Although some comments exhibited a tendency to be hesitant toward vaccines in general, it was clear that hesitancy was basically directed toward individual vaccines. For example, there were a number of comments expressing distrust toward influenza vaccine effectiveness that cited experiences of infection despite vaccination, and the majority of respondents were concerned about the risk of adverse reactions from the cervical cancer vaccine.

- *As an adult, I have continuously rejected the influenza vaccine, and I have only ever taken it once, when I was a university student. This is because I caught influenza after getting the influenza vaccine. When I told my mother that this is why I was worried about getting my child vaccinated, she said, "That's because it's like putting germs into your body," and I became even more opposed. (Woman, age 32, Hyogo Prefecture)*
- *The cervical cancer vaccine is the only vaccine where the benefits and risks have not yet been clearly determined. Among the various vaccines available, new reports on it say that, while rare, it can result in severe side effects that can impact your entire life. As the mother of a girl, it concerns me very much. (Woman, age 39, Kanagawa Prefecture)*
- *Until my child was about five years old, I allowed them to receive the free vaccines according to instructions. However, after they entered elementary school, I received all sorts of information and eventually arrived at the conclusion that vaccines are basically unnecessary. I think it may be more important for them to eat well and sleep well to make sure their immune systems are strong. (Woman, age 47, Tochigi Prefecture)*

Different age groups tend to express hesitancy toward different vaccines
Among younger respondents, many indicated that the COVID-19 vaccines had provided them with their first opportunity to consider the topic of vaccines themselves, and there was noticeable hesitancy toward COVID-19 vaccines. For many respondents in their 30s and 40s, the cervical cancer vaccine turns up in conversations frequently, as their children may be at or near the age it is recommended. Elderly respondents often talked about vaccines like the influenza vaccine, but there were almost no opinions on the pneumococcal vaccine for elderly people. This suggests that elderly people, who are the target population for that vaccine, are unaware of its existence.

- *I am a university student. Before the COVID-19 pandemic, I left vaccinations up to my parents and got my shots without thinking about it too much. That is why I only started to think about the pros and cons of vaccines after the start of the COVID-19 pandemic. (Woman, age 19, Hiroshima Prefecture)*
- *What concerns me right now is the cervical cancer vaccine. I have no medical knowledge, so my initial encounters are through information in the mass media, like on TV. I am having trouble shaking off the image of severe adverse reactions when the cervical cancer vaccine was suspended a few years ago, but my family doctor has recommended I get my child vaccinated. My eldest daughter is past the eligible age to get it for free, and I heard it would cost about 30,000 yen if she wanted to get it. That means it is too expensive (considering it cannot completely prevent the disease), so we did not consider getting it. (Woman, age 41, Hyogo Prefecture)*
- *The influenza virus mutates every year, and I do not believe the vaccine can keep up. On top of that, it costs money, so I do not get it. (Man, age 60s, Fukuoka Prefecture).*

People tend to focus more on the risks of adverse reactions

Regarding concerns about the risks of adverse reactions, respondents tended to view those that can have serious detriments on daily life or be life-threatening as more problematic than side effects that can happen shortly after vaccinations, like temporary fevers. It also seems that respondents generally obtain information on the hazards to health related to those adverse reactions through reports in the media. Some respondents were concerned about potential unknown side effects of COVID-19 vaccines, but it was also clear that these were safety concerns rooted in the fact that new technologies were used to produce the vaccines and that they were granted accelerated regulatory approval. Although respondents generally expressed the need to be willing to compare and examine such vaccines objectively to a certain extent without simply believing information shared due to the influence of media coverage, the findings also suggested that respondents tended to prioritize the emotional aspects over scientific or statistical information. For example, they may have heard about the risk of severe adverse reactions and thought, "That one-in-a-million case might end up being me or my child."

- *I was hesitant to take COVID-19 vaccine. This was because even though I understood that the vaccine was very innovative scientifically, it was approved so much more quickly than drugs which undergo conventional clinical trials that they cannot be compared, so I had doubts about the evidence that it was safe. (Man, age 28, Hyogo Prefecture)*
- *In the end, I was still highly doubtful toward the COVID-19 vaccine. I am not sure if it is true, but when I heard mRNA vaccines incorporated themselves into your genetic information, or that this was the first time we have tried such a vaccine, I was afraid that something would happen to my body in a few years, even if I am healthy now. If something does happen, we will not be able to prove that it was the COVID-19 vaccine that caused it, and I do not think anyone will take responsibility. (Man, age 46, Aichi Prefecture)*
- *While I was looking up information on vaccinations, I found a certain post on a social network. It was about a child who developed influenza encephalopathy after getting vaccinated for influenza, and ended up with serious complications… right after seeing that post, it just so happens I had to get vaccinated for influenza due to my husband's work, and I remember feeling hesitant. (Woman, age 32, Saitama Prefecture)*
- *When my eldest son was still small, our family nurse told me that there was a new combined MMR vaccine and recommended that I give it to him. I did, but later on, I heard that it could cause meningitis as a side effect. I remember regretting the decision slightly. Fortunately, he had no side effects, but upon reflection, I wish I had waited to see a bit longer. That event made me more wary of vaccines. (Woman, age 60, Ishikawa Prefecture)*

The most common comment regarding gathering information was, "There are so many conflicting opinions, it is difficult to decide"

When asked about gathering information, respondents often expressed that they use information obtained from TV as a reference to a certain extent, but do not place blind trust in it. It seems they have been given that impression because, due to the nature of the media, it can only provide limited amounts of basic information and because opinions differ, even among experts. Many respondents said that they search the internet to gather information due to this. Regarding online sources of information, while it appears that respondents placed more emphasis on the opinions expressed by experts in posts to social networks than those by individuals, the fact that examples of opinions differing among experts can be found online made it harder for respondents to make decisions. We also observed that respondents tended to emphasize opinions from health professionals when gathering information in real life, and that information is basically similar to information obtained online. However, it also seems the greater the respondents' concern was toward diseases and vaccines, the stronger their tendency to be more concerned about the situations surrounding friends or acquaintances. In this regard, there was a difference between how much people valued the opinions of individuals in person compared to those online.

In addition, regarding information provided by the media, some respondents shared the opinion that the media often reported on adverse reactions and that they could not obtain enough information to be convinced that vaccines are effective.

- *While I used TV, newspapers, and magazines to gather information (actually, those are the media I use regularly, so instead of "gathering information," I picked up on information naturally), but I made an effort not to take everything I heard or read at face value. When I came across opinions or information from researchers and doctors on Twitter or Facebook, I tried to pay more attention to that than those other forms of media. (Woman, age 27, Aichi Prefecture)*
- *While this might be something obvious, vaccine supporters only express positive opinions and deniers only express negative ones, so the more I look into it, the more I question if I can place my full trust in the information that I find. (Woman, age 32, Saitama Prefecture)*
- *I asked family and friends what they thought, but in the end, they only had opinions or information they saw on TV or online, so I did not learn much from them. (Man, age 46, Aichi Prefecture)*
- *What troubles me about judging information is that detailed basic information about people who experience adverse reactions is not included when those events receive media coverage. While I think underlying diseases and physical conditions can have an effect on severity, it is difficult to understand, so I cannot make a judgment. (Woman, age 48, Tokyo)*

Accessibility is more of a factor for stress rather than for hesitancy

While a certain number of respondents expressed dissatisfaction with aspects of vaccine accessibility like access and cost, responses suggested that accessibility was not such a major factor as to cause people to decide not to vaccinate.

- *When getting my children vaccinated, the time windows made available for vaccinations can be somewhat inconvenient. My kids are still small enough that they need naps (ages 1 and 3), but pediatricians usually provide vaccinations at different times than they see other patients, and our family pediatrician is no exception. Their time for vaccinations is right around nap time for my kids, so I have to adjust their nap times on days they are getting vaccinated, so I do feel some degree of stress. (Woman, age 32, Saitama Prefecture)*
- *It was not until I had a child of my own that I learned how expensive voluntary vaccinations are – some are almost 20,000 yen. I was surprised. (It seems some of them are free now, like those for rotavirus, hepatitis B, mumps, and chickenpox.) Although I did not put off having my child vaccinated due to the high cost, I have to admit I think prices like those pose a heavy burden. (Woman, age 39, Kanagawa Prefecture)*
- *For a family of four to each get two doses of influenza vaccine, it costs around 40,000 yen. Even if my entire family catches influenza, none of us have ever developed a serious case. As a matter of fact, we have never even received a prescription to treat it (the doctor said we did not need medicine). So all it cost was 1,000 yen or 2,000 yen for the examination fee. (Woman, age 47, Tochigi Prefecture)*

3.2.2. Experiences with vaccine hesitancy – Specific episodes

All responses to question 3 (on feelings of hesitancy toward taking a vaccine or giving a vaccine to one's children), which was treated as the most important question in the MROC, are listed below.

Figure 3-3 (Questionnaire, item 3): Responses regarding feelings of hesitancy toward taking a vaccine or having one's children vaccinated

Sex	Age	Location	Item 3: Feelings of hesitancy toward taking a vaccine or having one's children vaccinated Please tell us about your experiences with vaccinations (including those given to your children). Have you ever felt hesitant toward or refused to vaccinate?
Female	19	Hiroshima	I am a university student. Before the COVID-19 pandemic, I left vaccinations up to my parents and got my shots without thinking about it too much. That is why I only started to think about the pros and cons of vaccines after the start of the COVID-19 pandemic. I have been thinking more about vaccines since the events surrounding COVID-19 vaccines, and I am currently somewhat opposed to vaccinations. As I said in my previous response, I am still skeptical toward their effectiveness or side effects. But, whenever I see my friends and hear about them getting vaccinated, or the university provides information, I start to feel like I am the one who sticks out for not getting vaccinated… These made my thinking turn toward getting the vaccine. Even then, when I heard the news about a mutant strain and the third round of vaccinations, I decided not to get it. I thought I would have to keep getting vaccinated again and again. Another reason is that I thought getting the vaccine myself would make me think if I did that, then everything would be fine. But after hearing various opinions and gathering information, I became less negative toward the vaccination than I was at first. I am still unfavorable toward it, but if I am told that I absolutely must get the vaccine, I will. -----Additional comments I heard about it from family, friends, and college professors, and on social networks. Even without trying to look it up myself, information comes to you naturally on social networks, and my friends would always talk to me about COVID-19, so we would exchange opinions and I would hear about their experiences. I think this was because my university is a medical university and in part, because my professors' stories were very persuasive. Also, I started thinking, "I need to know there are various points of view," and I began paying attention to people whose opinions opposed mine. I think that is one factor that drew me toward the side of getting vaccinated.
Female	27	Aichi	I was hesitant about getting the cervical cancer vaccine. When I was in high school, it was provided for free or at reduced cost, depending on where you lived. At the time, the effects of that vaccine on the body became a hot issue, and although a high school student like me definitely felt uncertain, I remember my parents seemed extremely uncertain. After consulting with people like my family doctor, I ended up taking the vaccine.
Male	28	Saitama	I was hesitant to take the COVID-19 vaccine. This was because even though I understood that the vaccine was very innovative scientifically, it was approved so much more quickly than drugs which undergo conventional clinical trials that they cannot be compared, so I had doubts about the evidence that it was safe. I had conducted research in the biology field until graduate school, so I utilized my knowledge and read the summary of the

			papers published by the vaccine developers and contacted the professor at my laboratory to weigh the risks and benefits. Even though I was still worried, I got vaccinated this year, in autumn. Regarding the degree of my hesitation, it was at the level where I was considering refusing the vaccine, and I do not regret my decision to get vaccinated. However, if I experience unknown side effects in the future, I might end up regretting that decision, although I do not think it will happen. I also have to mention I had a high fever for several days as a side effect, so I am still on the fence regarding whether or not I should get the third dose. I have never felt concerned about taking any other vaccine. -----Additional comments Sorry for not noticing your reply. This is late, but here is my response. The potential risks I can think of for current COVID-19 vaccines is because they were approved much more quickly than medical products and vaccines are usually approved, and because they use new technology, there may be unknown side effects of the vaccine. Specifically, there is the possibility it will increase the risk that people develop some kind of disease. Its potential benefits are that it can significantly reduce the risks of contracting COVID-19 or developing a severe case of COVD-19. COVID-19 is an unknown disease. If people get infected, they not only experience symptoms like short-term fevers; some cases have developed long-term loss of taste. Findings from countries that were early to deploy the vaccines have shown that vaccinating provides significant protection from those symptoms. Furthermore, since the vaccine uses mRNA, it degrades quickly in the body, and there is almost no risk of residual products remaining in the body. Thinking about these facts led me to the decision that the benefits of getting the vaccine outweighed the risks. Does that answer your question?
Male	28	Hyogo	(1) It was in September or October of this year. (2) The vaccines were for me and my wife. (3) They were COVID-19 vaccines. (4) As for the reason we were hesitant, although they were free, I was concerned about the speed of clinical trials and whether or not the vaccines were truly safe. (5) Regarding how hesitant I was, I was a bit hesitant and only got two doses as a result. The reason we got vaccinated is because we have a small child and if we both catch COVID-19, we would not be able to take care of them. (6) Looking back on how I feel about that decision – and this is based on hindsight – I did not experience such bad side effects and think it is good I completed two doses. However, I think whether that decision was truly good or not depends on future coronaviruses, like the Omicron strain.
Male	29	Saga	In my case, my parents were unconcerned about many things, so I do not recall receiving any vaccinations during childhood other than those my school required. Even now, I live in the countryside, my work almost never requires me to interact with customers, and we almost never talk. To be honest, I have not taken the vaccine yet because it is a bother. -----Additional comments Thank you for your comments. I am not normally in contact with many people so, to be honest, I think it is unlikely that I will get infected. I work at a small business where my boss will not force anyone to get vaccinated. So, my honest feelings are that taking the time to get vaccinated is a bother. If I lived in a major city and was required to get vaccinated, I am unsure if I would do so. I think I would ask the opinions of everyone around me.

Male	30	Tokyo	I have a two-year-old daughter who has been given combined vaccines and, so far, she has not had any major side effects. My wife has also received various vaccines without experiencing many side effects. They do not seem to concern her and I think she is a vaccine supporter. While I have also experienced side effects after the COVID-19 vaccine, I have not experienced them with anything else. While I am somewhat concerned, in the end, I am in favor of vaccinating. However, I am worried about the cervical cancer vaccine. I have heard bad rumors about it, online and from other sources, so I cannot help but remain concerned about that particular vaccine.
Male	31	Aichi	When I was a university student, I worked part-time as a teacher in a cram school. I took the influenza vaccine to avoid the chances of infecting any students, but I have not taken any vaccine since I became a working adult. This is because the influenza vaccine gave me a fever and made me feel sluggish and COVID-19 vaccines frequently cause these symptoms as side effects. So, that was a factor that caused me to hesitate to take it.
Female	31	Fukuoka	I have not taken the influenza vaccine for the past few years. Although my company offers a subsidy covering half of it every year, I do not think I personally need it, not because of the cost. This is because of my age (I am in my 30s) and because I do not have any preexisting conditions, so even if I do not take the vaccine, I have very low chances of developing a severe case and will probably only experience mild symptoms. To be honest, I was very hesitant about taking the COVID-19 vaccine. Unlike influenza, COVID-19 is an unknown virus with no effective treatment. It has also been pointed out to cause severe illness in younger people with no underlying diseases. This means I was trapped between two fears – the fear that I might also develop a severe case if I became infected, and the fear of having an adverse reaction or long-term health effects after taking the vaccine. In the end, I decided to take it because I did not want to inconvenience those around me. There were times I regretted taking it because the side effects were stronger than I anticipated. I am lucky in that I did not have any long-term effects after the vaccination, but I will think carefully about taking a third dose.
Female	32	Tokyo	While I was looking up information on vaccinations, I found a certain post on a social network. It was about a child who developed influenza encephalopathy after getting vaccinated for influenza, and ended up with serious, lingering complications. The child's mother was adamant that we must never give anyone the influenza vaccine. I had never taken the influenza vaccine because I did not think that I needed it very much (I have never caught influenza, even without getting vaccinated). Right after seeing that post, it just so happens I had to get vaccinated for influenza due to my husband's work, and I remember feeling hesitant. I was hesitant to take the vaccine myself, but even more hesitant to have my children vaccinated. At the time, our child was still too young to begin attending daycare, so they would have had almost no chance of being exposed to the virus, so I talked to my husband about how I did not want to get them vaccinated because I was scared of side effects. However, my husband supports vaccinations and he had his workplace to keep in mind, so he wanted us to get vaccinated. He told me the chances of developing influenza encephalopathy were much higher if we did not get vaccinated, got infected, and developed severe complications, so in the end, I relented and took the vaccine. Although my husband had convincing points that I could understand in my head, I could not help but get carried away with various thoughts when it came to our child. I wonder if that is what being a parent is all about?

			-----Additional comments I came across frightening information about adverse reactions to the influenza vaccine after my child had already completed a number of routine vaccinations. Because we had not seen any side effects to the vaccines they already received, I did not feel very scared. I have yet to have my child vaccinated for Japanese encephalitis, and I am still scared of adverse reactions, which makes me somewhat hesitant. Because I have already been vaccinated, my attitudes toward vaccines are based on hindsight. My husband thinks the risk of adverse reactions from vaccinations presents less danger than the risks of contracting a disease, so he does not have a very negative image of vaccines.
Female	32	Saitama	To be honest, I have always felt that vaccines are not so important that you should pay money to take them. I have feelings of hesitancy toward the idea of putting a foreign substance that is not of natural origin into my body – which is not even taken orally, but is injected into the body. I would only be willing to take a vaccine after taking its safety and effectiveness into consideration and if the Government provided the vaccines to the public for free to protect society from an infectious disease. So, once I was old enough to take vaccines on my own volition, I basically stopped taking any vaccine that costs money. When my school or my boss gave stern instructions to take a vaccine, I did so reluctantly, but getting a vaccine is not something you should force other people to do, so I found it extremely unpleasant and impossible to understand. When I was a minor, my parents made sure I got all my vaccines, even the ones that cost money, but I have always accepted that as my parents' love. But, I do not like taking them when others force me to, even when they are free. -----Additional comments It was when I was working at a hospital and my boss forced me to take it. The head nurse said, "You haven't taken the vaccine yet?! Go take it, now!!" It's my decision whether to take it or not, so I thought it was typical power harassment. As a newcomer in the ward, I was in a weak position, so after weighing the vaccine against the disadvantages of not taking it (namely, stares from other people and pressure from the head nurse). But rather than weighing it against being laughed at, my attitude to begin with is that I do not think vaccines in general are worth spending your own time and money to get. This is because about the only time I ever had trouble not taking a vaccine is the power harassment I mentioned early, and the main reason I am hesitant is because you can still get sick even after taking a vaccine.
Female	32	Hyogo	This may be repeating some of what I said in my previous post, but I hesitated to take the COVID-19 and influenza vaccines, as well as to get my own child vaccinated for influenza soon after they were born. As an adult, I have continuously rejected the influenza vaccine, and I have only ever taken it once, when I was a university student. This is because I once caught influenza after getting the influenza vaccine. When I told my mother that this is why I was worried about getting my child vaccinated, she said, "That's because it's like putting germs into your body," and I became even more opposed. I wondered, "Why go out of your way to put bacteria into your body? Why do we have to do it when some people have adverse reactions?" I thought that I did not have to spend money and take that vaccine because I never caught influenza even without taking it every year, and I was living a

			healthy life. I asked an older woman in my mom circle if she was going to let her children get vaccinated for influenza, she said, “Don’t daycares and kindergartens ask parents to get their kids vaccinated? Children can get sick easily and if they get infected while they are still little, they can develop complications more easily, so I would have them get vaccinated.” This made me start to feel uncertain about my position, and I thought I should get them vaccinated. When I told them I was concerned about side effects, she said, “Most kids do not have side effects, and it will be too late to get the vaccine once they get sick.” My concern toward side effects was not really that deep, so I started to think I should get them vaccinated, and then I did. Since then, my child has received the influenza vaccine every year, and fortunately, they have never been infected with influenza and have been in good health. I now feel happy with my decision to get them vaccinated. Regarding my own vaccinations, I am happy that I have not had an influenza infection even though I have never taken the vaccine, so I think it is okay to continue not taking it. As for the COVID-19 vaccine, I felt reluctant because it had only just been developed. The reason is the same as the ones I described above: I do not have a good impression of vaccines and I am scared of experiencing adverse reactions. But, I was told the same things by someone else (my younger sister) about my past experiences and about the COVID-19 vaccine. She said she would rather get the vaccine and get sick than get infected and die. For some reason, hearing this convinced me (partly because I was not very reluctant toward the idea of side effects, and partly because her point came across to me so easily), and I decided to take the vaccine. After getting vaccinated, I did experience some side effects. I had a slight fever and some fatigue, but after a few days, I was back to my normal routine. I also felt an odd sense of self-confidence because I had been vaccinated, and it became a bit easier and more fun to go out, because I had been staying inside before. In the end, I am glad I took the vaccine. Although I can remember having an adverse reaction to the influenza vaccine long ago when I was a student, I question if there really was a causal relationship, and I decided to have a more positive attitude. So from now on, I think I can view vaccines in a more positive light.
Male	37	Osaka	Around summer of this year, my wife got her first dose of the COVID-19 vaccine. She seemed to have a very difficult experience, so I began to feel hesitant about taking it myself. I had not been reluctant to get vaccinated before that, so for the first time, I felt like I did not want to get it. I began to wonder if it was really necessary to take if it was going to cause so much pain. Even now, if I could avoid taking it, I would. However, unlike with the influenza vaccine, not taking the vaccine would place me in a socially vulnerable position. For example, I would not be able to use services that require proof of vaccination. I am feeling reluctant. By the way, I do not remember ever taking the influenza vaccine. My reasons for not doing so are because you can still get infected even if you get the vaccine, and because I do not have the time to visit a hospital to receive it. As far as I can remember, once, when I caught influenza, I went to the hospital and the doctor scolded me for not getting vaccinated for influenza. I thought to myself, “The vaccine is voluntary, isn’t it? I don’t understand why I have to listen to this.”
Male	37	Tokyo	This fall, influenza vaccines were administered at a hospital designated by my workplace. While the company covers the whole cost, I did not take the vaccine because the designated hospital was in an inconvenient location and because the vaccinations were only conducted on weekdays, and I was

			busy with work. The company has not made the vaccination mandatory, so this was no problem. I hate getting shots, so if I have even the slightest reason to refuse one, I will. If they had conducted the vaccinations on-site at the company, I would have had no reason to refuse, so I think I would have taken the vaccine. However, for the COVID-19 vaccine, even though it was inconvenient, I went and took it due to the atmosphere in society.
Male	37	Hokkaido	I was unsure as to whether I should get vaccinated for COVID-19 this year. My work is related to welfare, and thinking of my client base, I think that I should get it, but all I ever hear about it on the news seems to be side effects, and few of the people around me actually experienced them. Also, we do not know what sorts of effects it will have years from now. So that's another point of concern. I eventually got two doses, but the second time, I came down with a fever. I had a headache, a soreness at the injection site, joint pain, and chills. I had to take two days off of work, so I was worried about my third dose, which is planned for next year. At the moment, I intend to take the third dose.
Female	39	Kanagawa	The cervical cancer vaccine is the only vaccine where the benefits and risks have not yet been clearly determined. Among the various vaccines available, new reports on it say that, while rare, it can result in severe side effects that can impact your entire life. As the mother of a girl, it concerns me very much. But, in recent years, I get the impression that doctors are recommending it, so I have started to understand that I should not rely on preconceptions. My daughter is still too young to get it, so I am watching developments closely. As for myself, my mother told me that she did not give me the vaccine based on her own judgment. As for the COVID-19 vaccine, my children are not yet of eligible age and my husband and I have already taken it. At first, because of the short development period, I was hesitant about getting the COVID-19 vaccine, but my husband and I both work full-time. Given the conditions at our workplaces (both of which offered on-site vaccinations), it was difficult to choose not to get it. We both ended up taking it, though we took the long way around. I am not going to have any more children, so even in the worst case scenario, I felt that it would be sufficient if I were the only one who had to suffer. It seems that vaccinations will open up for children in the near future, however, so in terms of parental responsibility, I am not free from hesitation regarding if it is really the right decision to get our children vaccinated. -----Additional comments My mother told me that when my doctor explained the cervical cancer vaccine to her, her intuition told her that it could be something that would affect the future of her daughters (this was the period when adverse reactions had yet to become a problem), and she did not allow us to get it. My own judgment criteria are still vague, but my daughter will be eligible for the vaccine for over a decade, so in that time, I would like to think about it while looking at things like statistics and what side effects appear. I understand that no vaccine is 100% safe and that there is no such thing as zero risk. By the time my daughter's eligibility period is almost up, she will be old enough to decide on her own, so I would like to talk about it with her then.

Female	41	Hyogo	Good morning. Seeing everyone's opinions regarding getting vaccinated or not in the comments yesterday was very insightful. Some of this will be repeated from my post yesterday, but everyone in my family has taken the COVID-19 vaccine. I had the strongest side effects, so rather than the Moderna vaccine I took, I had my children get the Pfizer vaccine a few days later. What concerns me right now is the cervical cancer vaccine. I have no medical knowledge, so my initial encounters are through information in the mass media, like on TV. I am having trouble shaking off the image of severe adverse reactions from when the cervical cancer vaccine was suspended a few years ago, but my family doctor has recommended I get my child vaccinated. My eldest daughter is past the eligible age to get it for free, and I heard it would cost about 30,000 yen if she wanted to get it. That means it is too expensive (considering it cannot completely prevent the disease), so we did not consider getting it. However, it seems that it will become possible for her to get it for free, so now I am uncertain about it again. I think I will leave it up to my daughter to decide, in the end. So, right now, I plan to research various topics and talk about it with my children. -----Additional comments That's right, I am one of the people who is uncertain. I think my eldest daughter was right around that age when the cervical cancer vaccine was suspended. My second daughter is currently a middle schooler, and it was only last year she received a printout from school announcing the vaccination. This sort of thing just makes me more and more concerned. She only visits our family doctor when she catches a cold or something, but our family doctor told us, "I think it is best to get the vaccine." Maybe that is because our doctor is a woman. I think it would help to set my mind at ease if I knew the percentage of people that experience adverse reactions, what kind of reactions those are, and what actions to take in the event of an adverse reaction. I feel extra cautious because it is not for me, but for my child. When it came time to decide about COVID-19 vaccines, my children saw what side effects I had, and they heard various stories about it because the people around them started to take it, like their friends and classmates. These factors led to them deciding to get vaccinated.
Female	41	Toyama	Regarding the COVID-19 vaccine (which my daughter (grade seven) and I were both eligible for in 2021), we were told that the COVID-19 vaccines are for preventing severe complications, and that it is difficult for people without preexisting conditions or who are not elderly to develop severe complications, so I think that getting vaccinated is unnecessary. On top of that, the preventive effects, long-term side effects or lingering complications were all unknown during the clinical trials. Comparing our chances of catching COVID-19 to the risks of having adverse reactions to the vaccine, we decided it was safer not to vaccinate. Looking at how the world has been so preoccupied with vaccines, another reason is I can only think of it as being for the benefit of politicians and pharmaceutical companies. The people around me at my workplace and in my family have strongly recommended I get the vaccine (and were half-threatening), but I have totally refused, and even now, I do not intend to ever get the vaccine. Because we still do not know what complications it may cause or preventative effects it will have in the future, I do not know if this decision is the right one. Regarding the cervical cancer vaccine (which my daughter (grade 7) became eligible for in 2021; and for which I was eligible around 2010), I heard in the news that some children had severe lingering

			complications after receiving the cervical cancer vaccine, so I felt it was dangerous, and I decided to avoid it no matter what. I will never forget the Government's attitude, in which they had no intention whatsoever of guaranteeing its safety even though it was originally mandatory. In the end, I have not taken the vaccine. I do not think my decision was the wrong one.
Female	41	Miyazaki	Regarding reservations toward vaccinations, we have to consider the premises that I am no good at getting shots and I have allergies, I tire easily, and I can get headaches and feel ill due to changes in air pressure and the weather (such as during a heavy rain). So I have a strong fear of vaccines, because I think my body will not be able to withstand the stress and that I might get sick. Therefore, I do whatever I can to avoid taking any kind of vaccine. I also have dysmenorrhea. Every month, changes in my hormonal balance cause disruptions in my health almost every two weeks, from ovulation period, and pre, during, post-menstruation. (While I did undergo hormone therapy, that only made it worse. I deeply regret taking hormone therapy.) This means that I have strong feelings of fear, reluctance, and rejection toward the idea of introducing any foreign substance that was not inside my body to begin with, including vaccines. - Regarding the cervical cancer vaccine: The Government was promoting it for a time, but reports in weekly newspapers said some high school girls had abnormalities after taking it. My immediate family told me, "Some Diet members are pushing the cervical cancer vaccine, but there are still so many unknowns. Definitely avoid it." As I already mentioned, my body is not very tough, so I decided to never take the cervical cancer vaccine. Until now, I have never had the opportunity to receive a recommendation to take the cervical cancer vaccine (such as at my workplace or at a hospital), so I have not taken it. I think I made the right decision. - Regarding the influenza vaccine: My employer covers half of the cost of the vaccination, and every year, they recommend that we get it. Many of my colleagues are vaccinated. However, I feel that my body will be overcome by the vaccine and I will develop influenza (I am almost certain of it), so even though they recommend it every year, I turn them down. After all, I have only contracted influenza one time, a decade ago, without getting vaccinated. I think it was a good decision not to get vaccinated every year.
Female	41	Hokkaido	I took the COVID-19 vaccine this summer, in August. My local government was administering vaccinations, so I applied and took it. I did have the option of applying for a mass vaccination provided at my workplace one month in advance, but when I heard that would be the Moderna vaccine, I decided to take the Pfizer vaccine instead, because it had the lowest chances of side effects. In the end, I developed a high fever after the second dose and had to take time off from work. I was concerned with how my own body's immunity would change after that vaccination, and how it might be different for the rest of my life. This worried me and I was very uncertain before I chose to get vaccinated. Before I was vaccinated, someone at my work had gotten infected with COVID-19, so we were taking PCR tests once every week. We also had restrictions on travel, and they had a strict quarantine period of one week for people who came back from travel. Those rules stopped applying as soon as we got vaccinated, so at the moment, I am glad I did it.

Male	46	Aichi	I was very uncertain about the COVID-19 vaccine, but I ended up taking it. As I mentioned in my last post, in the end, I was still highly doubtful toward the COVID-19 vaccine. I am not sure if it is true, but when I heard mRNA vaccines incorporated themselves into your genetic information, or that this was the first time we have tried such a vaccine, I am afraid that something will happen to my body in a few years, even if I am healthy now. If something does happen, we will not be able to prove that it was the COVID-19 vaccine that caused it, and I do not think anyone will take responsibility. I guess after all, I was vaccinated under my own volition, so it might be wrong to try to place the blame elsewhere. I think a long time ago, I was given many vaccines, but I have little memory of that time and I do not remember if I felt any hesitation or misgivings. I do, however, get vaccinated for influenza every year, and I have never hesitated to do so at all. My attitude is like, "Oh, it is flu season again, I have to go get vaccinated." I have been infected with influenza twice in the past, and I do not want to go through that pain again. I think that is a major reason. I decided to get the COVID-19 vaccine after a great deal of worry, but I have never looked up any details regarding the influenza vaccine. Yet, it is my routine to take it every year without thinking about it. That's curious, isn't it? -----Additional comments At first, I told those around me that I would not be taking it myself. However, I had to give in to a sort of pressure that I felt at work, as well as the urging of my wife's parents, who kept asking when I was taking it. The number one reason I took it was to reassure my in-laws. I thought they would want to see their daughter, and it would be difficult for them to do so if I did not get vaccinated.
Female	47	Saitama	Japanese encephalitis vaccinations were suspended right around the time my son was the recommended age to get it. Even after the vaccinations resumed, my sense of unease has yet to go away, and I still have not had him vaccinated. The period it is available for free has been extended to age twenty. I am almost ready to have him get it, but I am still having trouble taking that step. I find it concerning. -----Additional comments (Follow-up question: When you said the "Japanese encephalitis vaccinations were suspended," do you mean when the Government "withheld the active recommendation of the vaccines due to severe cases of acute disseminated encephalomyelitis (ADEM)"? Can you share some more details regarding what actions you have taken in response to those concerns? For example, "I researched this," or "I talked to so-and-so." Also, why did you think to take those actions?) It was in the news at the time and I talked about it with the other moms. I was concerned and also tried asking my child's pediatrician. In the end, while the active recommendation of the vaccine was suspended, our family also chose to take a wait-and-see approach.
Female	47	Tochigi	Until my child was about five years old, I allowed them to receive the free vaccines according to instructions. However, after they entered elementary school, I received all sorts of information and eventually arrived at the conclusion that vaccines are basically unnecessary. I think it may be more important for them to eat well and sleep well to make sure their immune systems are strong. Of course, this can depend on the person. - Regarding Japanese encephalitis: We may have had our children get

			vaccinated if we lived in Kyushu. I have heard that the disease was highly prevalent in western Japan, particularly in Kyushu. - Regarding influenza: When my eldest daughter was in kindergarten, half of her class caught influenza and they had to close school for that class, but she did not get infected even though she was unvaccinated. Then, one Saturday night when she was in second grade of elementary school and was unvaccinated, she had a fever of 39 degrees. Since the hospital was closed on Sunday, we went on Monday. Even though she tested positive for influenza, we were not prescribed any medicine because her fever had already gone down. Her fever had gone down naturally, without medicine, and she had no runny nose or cough – in other words, her symptoms were less severe than the common cold. When my second daughter was in kindergarten and was unvaccinated, she had a fever of 39 on a Sunday, then a normal body temperature on Monday, then a temperature of 38 on Tuesday. I took her to the hospital where she tested positive for influenza. The diagnosis was that her fever had already peaked, so she was not prescribed medicine. This was another example of natural recovery. Due to these experiences, I feel that my children do not require the influenza vaccine. -----Additional comments I wondered, why would a child who is not vaccinated and commutes to kindergarten on the school bus every day not get infected when half of her class is out of school with influenza? Any way you look at it, the influenza virus must have been present in the bus or classroom, so it must have entered her body. The virus entered her body but she did not develop symptoms. I thought maybe she had a strong immune system. I have not heard any stories of mumps infections from the people around me at all, so I am more concerned with the side effects of the vaccine. I am worried about the fact that the cervical cancer vaccine can cause side effects when it does not even completely prevent the disease. I think all that we need is to have regular checkups for early detection and treatment.
Female	48	Tokyo	When my eldest son was little, right around the time the Japanese encephalitis vaccine was causing serious adverse reactions, the active recommendation of the vaccine was suspended, and they stopped providing vouchers for it. We did not have him vaccinated. I would not go out of my way to pay for and go get a vaccine that was not recommended, and if I am asked how much we needed the vaccine at that time in our lives, I do not think it was particularly necessary, so I did not have him vaccinated for some time. Eventually, a new vaccine was developed and vaccinations started up again as part of the routine schedule, and we were sent a vaccination voucher. I felt a sort of hesitancy like, “I wonder if it is safe to get the shot now?” I took the wait-and-see approach for about one year and there were no reports of serious side effects and those around me had started getting it again. I thought that they would not be able to provide the vaccine free of charge as a routine vaccination without it being extremely safe and necessary, so we gave my son the vaccine. -----Additional comments (Follow-up question: Please share more regarding your impression of routine and voluntary vaccinations and trust in the Government.) If public funds are being used to provide many people with vaccinations for free, I think they must be quite safe. I feel like I will be inconvenienced over

			the course of daily life if we do not get the routine vaccinations. I feel voluntary vaccinations are not as necessary. However, routine vaccinations are sometimes canceled due to problems related to safety, and there are times that voluntary vaccinations are added to the routine schedule one after another. If you look up various information or hear various stories, there are times when you get overloaded with information and no longer know what is true, and it can backfire and increase your worries. People sometimes say there is back-scratching going on with pharmaceutical companies, and once you start to doubt, there is no end to it. I also have the impression that it causes trouble for your daily life if you do not have your children receive their routine vaccinations, because you have to write down if they completed them, why you have not received them, and other such information when filling out school enrollment paperwork. ---------- Because there was so much coverage of severe adverse reactions to the cervical cancer vaccine, if someone told me out of the blue that I had to get it for my daughters, I would be very scared. First of all, we adults do not have the experience of taking that vaccine. We do not have opportunities to hear about it from people around us who took it. I think the total number of people who have taken the vaccine is very small (counting both adults and middle- and high school-age girls), and because I have not been able to talk to other mothers with girls that age recently, all I have heard about it has been from the news. Also, my daughters will not be of eligible age for the vaccination for many years. The vaccine may have been improved by then. By then, I think I will have to do more research, gather more information, and talk about it with my daughters, but for now, I think there is no need to push the vaccine onto them. Many years ago, one of my friends developed cervical cancer (back when there was no vaccine). She had it removed and was able to have another baby recently. If the vaccine can prevent it in a safe and reliable manner, I think that would be great, but given the lack of clarity regarding its safety, I get the impression that the protection it offers is not very good. I think having regular checkups from a gynecologist might be more important for early detection and response. Now that I mention it, my friend's eldest daughter is in eleventh grade, and when I see her next, I would really like to ask her what she thinks about it. Also, the next time I go to the gynecologist for a checkup, I will ask about it then, too.
Male	48	Tokyo	Around July or August of this year, I was feeling somewhat hesitant about taking the COVID-19 vaccine because of side effects. I weighed this against its ability to prevent severe infections, though, and decided to take it. I felt a sense of relief after getting vaccinated and am glad that I took it.
Male	50	Osaka	As a child, I was diagnosed with bronchial asthma and my symptoms at the time were quite severe. On top of that, I had allergy symptoms, so throughout elementary and middle school, I received almost no mass vaccinations or other vaccinations. Of course, there was no internet at the time, and I remember being told to avoid all vaccinations based on the opinions of my parents and doctor. The first time I have ever taken the influenza vaccine was about 10 years ago. (That was because my asthma was under control.) In addition, my doctor was very hesitant to give me the COVID-19 vaccine. When I think of how even doctors can be hesitant in today's internet society, in which information is always available from various sources and is updated daily, because my parents, doctor, and school were afraid of adverse reactions, I think the decision not to give me

			vaccines as a child was the correct one. -----Additional comments Whether it is by word-of-mouth, like in the old days, or over the internet or a social network in the modern age, obtaining accurate information will always be difficult. As we see with word-of-mouth, rumor, newspapers, TV, the internet, and social networks, the options we have to gather information just keep increasing as time goes by. In the end, I think we still have to rely on our own judgment when deciding which source to trust. (The same applies to understanding.) A doctor who is hesitant toward the COVID-19 vaccine might be thinking, "My patient has an underlying medical condition, and even though it is already September, they have not taken the vaccine yet." They might also be thinking, "Will it be safe to vaccinate this patient? What should I do if they have an adverse reaction?" It warps your intuition in a strange way, doesn't it? I simply thought "If I get the vaccine, I won't have side effects, will I?" and got vaccinated two times. For about 15 minutes after getting vaccinated, I felt very anxious with such thoughts.
Male	50	Tokyo	Once, my older brother received a vaccination that made him sick. He got physically ill and had to struggle due to vaccines. So, my parents did not vaccinate me. I do not know if it was caused by his physical constitution. However, the other day, I was given some painkillers at a hospital and, although I think the amount would not affect a normal person, I had respiratory failure and almost died. I am unsure why that happened. I am afraid it may have been due to my physical constitution. So those are some items that concern me, and if there is a problem with my physical constitution, my children may have inherited that problem, as well. So, I have not taken the vaccine or given it to my children. -----Additional comments I have never been told what vaccine my brother was given, so I do not know what it was. I also think my doctor did not anticipate I would have such a reaction to the pain medication. When explaining them to me, he said he did not know if I was allergic to them because I had not taken any medicines since childhood. I guess he administered them under the simple assumption that if they were safe for many other people, then I would also be okay.
Female	51	Osaka	Some of this post might be repeating my previous post, but one of the main reasons mass vaccinations for the influenza vaccine are no longer conducted is due to the problem of side effects that sometimes occur after administering influenza vaccines. Effects that occur after influenza vaccination other than building immunity and appear as common side effects include high fever and rash. In some cases, it can also cause more serious symptoms like difficulty breathing. When mass influenza vaccinations were being administered, there were reports of adverse reactions. Some cases involved serious adverse reactions that left permanent complications and led to lawsuits seeking damages from the Government. While the benefits of vaccinating include reduced risk of infection and better protection from serious complications even if one is infected, the potential for vaccines to cause adverse reactions has resulted in the current system used for vaccination, in which influenza vaccinations are conducted according to the discretion of the individual while taking their physical constitution and preexisting conditions into consideration. (The previous text was copied from something I found while looking up information online.) It has been said for a long time now that influenza B

			virus vaccines do not work, and even some vaccine advocates have said it is ineffective. Despite that, it is still in current use. I have heard some reports that when mass vaccinations were discontinued, pharmaceutical companies pressured the Government, saying, "Are you trying to drive us out of business!" There is also what happened to my younger sister. Because of this, my family has been taking thorough precautions to avoid getting infected, and neither I nor my children have been vaccinated. Hearing about what my friends or my husband's colleagues at work experienced with the COVID-19 vaccine, I have to conclude that the time between its development and when vaccinations started was just too short. It only worries me, so I am not vaccinated and neither are my children. (Although there is no clear causal relationship), the idea of dying from taking a vaccine intended to prevent a disease frightens me too much and I cannot do it. Many of my friends around me have not taken the vaccine for that same reason. The MHLW suspended its active recommendation of the Japanese Encephalitis vaccine as of May 30, 2005 because a clear causal relationship was established between the vaccine and the outbreak of a disease called acute disseminated encephalomyelitis (ADEM). (Here, I have copied an explanation I found online.) Because that happened, I did lots of research when my children were getting vaccinations. Many people with children in the same age group did the same. Even when the new vaccine was produced, for quite some time, I could not bring myself to get my children vaccinated. When I asked our family pediatrician, they said, "If you don't have your children vaccinated every few years, it will become ineffective. If you do not continue vaccinating them, it is pointless. While I cannot say for certain, if you live in an environment with no pigs nearby, there is almost no chance your children will get Japanese encephalitis." Among medical associations, they provide various opinions regarding each vaccine and there are many opinions regarding what approach to take for each one. I hope they can present information that says, "We recommend this" in a unified manner that will not confuse the public. If everyone only acts for their own self-interest and tries to protect their connections to some pharmaceutical company by not pointing out certain things that are obvious, then we do not know who to trust. Perhaps we can then only trust our intuition?
Male	55	Gunma	#N/A
Male	57	Hokkaido	My children have already grown up, so I think it is okay to leave it up to each individual to decide if they want to be vaccinated. Personally, I do not feel any hesitancy, but I still have no plans to get vaccinated. -----Additional comments Thank you for your hard work. I think the reason I was hesitant was the safety of the COVID-19 vaccine, especially because I think there is no guarantee it will not cause some sorts of adverse health effects in the future. I do not think there is any data on that at all, and even experts do not know. I think people feel a sense of reluctance toward putting something unknown into their bodies. If the Government and the experts are so certain about a vaccine's safety, all they have to do is make it mandatory. That leads me to ask, why is it voluntary? I start to question it. If someone decides not to take a vaccine, then there is no option but to convince them to take it. As you mentioned, this is certain because they have made their intention clear.

Male	57	Nara	I have never even taken the influenza vaccine (I also cannot remember if I ever got one at school, when I was a student), and I have never caught influenza. The family that lives next door has small children and almost every year, someone in their family catches influenza even though they are all vaccinated. Seeing them suffering, I assumed the cause of the infection was their environment. For the COVID-19 pandemic, at first, I thought we would be okay if we took careful measures to avoid spreading the disease, but seeing the pandemic never end and the huge number of deaths, I decided to get vaccinated. I am currently thinking about the risk of developing a breakthrough infection and am uncertain whether to take the third dose or not.
Female	60	Ishikawa	When my eldest son was still small, our family nurse told me that there was a new combined MMR vaccine and recommended that I give it to him. I did, but later on, I heard that it could cause meningitis as a side effect. I remember regretting the decision slightly. Fortunately, he had no side effects, but upon reflection, I wish I had waited to see a bit longer. That event made me more wary of vaccines. That is another reason why I have refrained from taking the influenza vaccine. -----Additional comments A nurse at our family doctor's office recommended a certain vaccine to me, like normal, saying "The new vaccine is available now, so you should get it." Since I trusted her at the time, I took it without hesitation or any feelings of anxiety. Reports about side effects started being made later, so I had no choice but to pray that we did not experience them. Regarding influenza, my child was allergic to eggs and the influenza vaccine is produced using eggshells, so the pediatrician at the hospital advised me not to give it to them, and they stopped taking it. I also learned that the influenza vaccine is designed to prevent the strain that was prevalent last year and nobody can say what strain will be prevalent this year, so I think taking it is pointless.
Male	60	Fukuoka	In the past, I have never been vaccinated for influenza, but I went along with the general trend in society and took the COVID-19 vaccine early. I do not know when we will be able to tell if that was the right decision. -----Additional comments I have not taken the influenza vaccine because the influenza virus mutates every year, and I do not think we can keep up with that. Also, because it costs money to get vaccinated.
Female	60	Chiba	This story happened a very long time ago and my memory is a bit fuzzy, but I think I remember having trouble making a decision on the MMR vaccine. My child was attending a day-care center at the time where they were picking up all sorts of viruses, and I thought about getting it to prevent what I could. Around that time, reports of side effects started appearing in the news. Our family pediatrician was the doctor at the day-care center (and she was a woman), so I asked her about it. She said that it might be best to vaccinate from the perspective of a working adult, but I was unsure and did not get the vaccine. The information we had back then was not as abundant as it is today, but I would like to think of these things carefully, especially when they concern children.

Female	61	Tokyo	My daughters were born in 1988 and 1989 and their vaccinations were handled differently by the Government. Each time, I had to do my own research and make my own decisions. My eldest daughter was included in a mass vaccination for Japanese encephalitis, but by the time it was my younger daughter's turn, it had become voluntary so I did not have her vaccinated. As a parent, I could not shake my concerns about the impact of side effects or their doubts toward effectiveness, so I did not want to give her any vaccines. However, there was a significant amount of push from the other parents around us and the vaccine supporters of my parents' generation, so it took a lot of effort to stand firm. Now, my daughters are getting the influenza vaccine every year voluntarily. While they do sometimes catch influenza even after getting vaccinated, they do it because they are members of companies as full-time employees. Their decisions are not in line with the ones I have made in the past, and I cannot say who is right, so I just have to watch over them as adults making decisions for themselves. -----Additional comments The reasons vaccines are voluntary is as I have described above, as are the points that vaccination supporters want to make, so I have nothing more to explain.
Female	61	Kyoto	Basically, there is no vaccine I would refuse to give them. For the combined vaccine, I did not let them get vaccinated until I had researched it carefully. The more I looked up about the cervical cancer vaccine, however, the more worried I became, so I did not give it to my daughters.
Male	62	Saitama	I have never had any doubts about the influenza vaccine (I have never taken it). However, with the COVID-19 vaccine, I did not really want to take it, but my family (my wife) took it without saying anything. (I think that may have had something to do with the fact that she was required to take it for work.) I was basically caught up in that. While I was not entirely convinced, I thought it would be effective to some extent, so now I am basically happy with the fact that I took it.
Female	64	Kochi	When my child was preparing for the middle school entrance examination, I had them get an influenza vaccination. When it was close to the time for the exam, they got infected with influenza twice and I remember how frustrated we were. While the teacher at his cram school told me how lucky it was that they did not get sick on the day of the exam, but if I knew how things would have turned out, I would not have had them get the shot. I thought I would never let my children take something like that again. If they take it at the wrong time, it can have the opposite effect and make them more susceptible. Whether it can prevent influenza or not just turns out to be luck, I think.
Female	65	Kyoto	(Regarding the DPT, Japanese encephalitis, and influenza vaccines) when my children were young, Japan was not yet an information-based society like it is today, and I remember getting them vaccinations when we received notices from the public health center and local government. At the time, I thought it was natural to get kids vaccinated, so I had no hesitation to do so. Looking back, it seems my children were left with the impression that vaccines are "painful" and "scary." I did not know anything about side effects, and I just said, "Everyone else is taking them." In recent years, we can obtain lots of information by looking it up online, so I think it is a matter of fact people are more hesitant now that they know how scary the side effects can be. My daughter is now in her 30s and says she will not take a

			vaccine voluntarily. I avoid sharing my own opinion and saying, “It’s better to take them,” because it seems she has her own ideas. It seems she has decided not to vaccinate her children (my grandchildren). Looking at everyone’s opinions, I saw there are many ways of looking at it, so it was helpful.
Male	69	Osaka	#N/A
Female	74	Tokyo	I have three children. I think they had most of their vaccinations during compulsory education. I had them vaccinated without thinking twice about it. As long as we have been married, my husband and I have never taken a vaccine. There is no particular reason for that. It is a bother and we think we will be fine without taking any. We have never taken the influenza vaccine, either. With COVID-19 vaccine, though, I am concerned with how others would see us. We took the COVID-19 vaccine because we did not want to bother other people. -----Additional comments It was not mandatory, I am worried about side effects, and my daughter opposes it, so I refused the vaccine. The reason my daughter opposes it is because a foreign substance entering the body weakens the immune system. She believes it is important to maintain a physical composition that protects you from severe symptoms even when infected by reinforcing your immune system with diet and exercise. My feelings are the same.
Male	75	Saitama	I hate injections, so I have never taken an influenza vaccine or any of the other free vaccines offered to elderly people. For COVID-19, at first, I was intent on not taking the vaccine. But, many of my activities that involve elderly people included vaccination as a condition, so I got vaccinated in June or July, due to work. It was easier than I expected, and I experienced almost no symptoms after the injection, so I was reassured that there was nothing to worry about. My children’s workplaces also required caution against COVID-19, so they have taken the vaccine. However, my grandchildren (two girls, in grades seven and nine) are very concerned about problematic symptoms after the injection, and they insist on not taking the vaccine. Given the current circumstances surrounding the pandemic, I think it is best to let them take the vaccine when they feel it is the right time to do so.
Male	76	Tokyo	I do not know about my family’s vaccination status because, to begin with, my childhood was about 70 years ago. As far as my wife can remember, we gave our two children the BCG and DPT vaccines. We did not give them any vaccines after that. My wife and I have not taken any vaccines, including for COVID-19. As for the reason why, we did not feel the need to take the vaccines at the time. But, for COVID-19, it feels like they have been persistent about pushing it from the beginning without knowing if it is effective. The data that has been presented does not seem very credible. As I said previously, I think Pfizer and other pharmaceutical companies were putting money first, and in political and economical terms, Japan’s number one priority at the time was holding the Olympics. People should take vaccines with peace of mind, once they are convinced they are safe and reliable. They are not something you should pester someone into taking. I hope experts will be able to provide clearer explanations regarding the vaccine’s effects and trends in the number of people infected. If they do not do that, elderly people with underlying diseases will not be convinced to take the vaccine.

4. In-depth interviews

4.1. Survey overview

Objectives	To determine what factors cause vaccine hesitancy detected in the MROC, and to examine the deeper psychological aspects of hesitancy-related feelings and behavior as well as potential methods of alleviating or preventing said feelings and behaviors through interviews with anthropologists.
Survey period	From January 17, 2022 to February 2, 2022
Venue	Online interviews over Zoom
Participants	A total of 10 men and women residing in Japan and of age 18 or over *For details on participant characteristics, please see Figure 4-4: List of in-depth interview participants
Interview length	1 hour

Figure 4-4: List of in-depth interview participants

Name (Pseudonym)	Sex	Age	Location of residence (Prefecture, City, City Status)			Marriage status	Raising children	Family size	Occupation	Industry	Educational background	Annual personal income	Annual household income
Tajima	Female	19	Hiroshima	Mihara	Other municipality	Married	No	1	University or graduate student	(No response)	Four-year university	Less than 1 million yen	Less than 1 million yen
Yamamoto	Male	28	Hyogo	Amagasaki	Other municipality	Unmarried	No	1	Full-time (General staff)	Utilities	Graduate school	5 million yen to 5.99 million yen	5 million yen to 5.99 million yen
Umeda	Female	39	Kanagawa	Kawasaki	City designated by Government ordinance	Married	Yes	4	Full-time (Professional staff)	Education or learning support	Four-year university	8 million yen to 8.99 million yen	15 million yen to 19.99 million yen
Igeta	Female	41	Hyogo	Itami	Other municipality	Married	Yes	5	Full-time (Professional staff)	Medical and welfare	Junior college	2 million yen to 2.99 million yen	8 million yen to 8.99 million yen
Umeyama	Male	46	Aichi	Nagoya	City designated by Government ordinance	Married	No	2	Full-time (General staff)	Transportation or postal	High school	4 million yen to 4.99 million yen	9 million yen to 9.99 million yen
Komai	Female	47	Saitama	Asaka	Other municipality	Married	Yes	3	Full-time homemaker	(No response)	Four-year university	Less than 1 million yen	7 million yen to 7.99 million yen
Horie	Female	48	Tokyo	Koto	Special Ward (Tokyo 23 wards)	Married	Yes	5 or more	Full-time homemaker	(No response)	Junior college	Less than 1 million yen	8 million yen to 8.99 million yen
Takada	Female	60	Ishikawa	Hakusan	Other municipality	Married	Yes	2	Full-time homemaker	(No response)	Vocational school	Less than 1 million yen	3 million yen to 3.99 million yen
Watase	Female	74	Tokyo	Nishitokyo	Other municipality	Married	Yes	3	Full-time homemaker	(No response)	High school	Less than 1 million yen	9 million yen to 9.99 million yen
Sunaga	Male	76	Tokyo	Tama	Other municipality	Married	Yes	5 or more	Self-employed	Other service	Four-year university	5 million yen to 5.99 million yen	10 million yen to 14.99 million yen

4.2. Survey results

4.2.1. Ms. Tajima

Basic information

- Female, age 19; lives alone in Mihara City, Hiroshima Prefecture. University student (field of study: medical/welfare).
- My father (age 49) and mother (age 53) live together in Nagasaki. My mother works part-time and my father is a full-time white collar employee. I am from Nagasaki, too, but I moved to Hiroshima when I started university. I normally keep in touch by exchanging messages with my mother over LINE.
- Last year, I graduated from high school and enrolled in a university in Hiroshima.
  - I am attending a medical and welfare university. It has schools of nursing and welfare and my major is social welfare. I am studying law and medicine, and I am currently taking classes like Introduction to Medicine. Social welfare has three main fields of study: welfare for the elderly, child welfare, and welfare for the disabled. After graduation, some students go on to work in these fields, while others join general companies or become civil servants. I am not thinking much about employment right now besides that I would like to work in a hospital.
  - I do not want to only work with elderly people or people with disabilities; I want to work with all kinds of people. That includes people in good health, those who are not in good health, and whether they are elderly, disabled, or neither. I want to support those who are similar to members of the general public. There are people who are having trouble even though they seem like everything is normal, so I want to work with people like that. People who are close to the average person in addition to people who are the most vulnerable among the socially vulnerable. Hospitals have recently been establishing roles like that.
  - (Do they teach about vaccines at your university?) No.
  - (Regarding university life) I have no friends at all, nor am I involved in any club activities. As a hobby, I have been learning an instrument for a long time, so I guess that is my hobby. There are only about 40 other students in my course (the social welfare course), and there is only about one person among them who I can talk to regularly. It was the person sitting behind me at the entrance ceremony. When we talked, it seemed like we would get along well. When commuting to school, sometimes we go together.
  - In April 2021, I was able to attend school in person twice a week for about two weeks. I was also able to go for a short while in December, when I was able to go to about half of my classes. Last year, there were many courses offered online, so I returned to Nagasaki. I spent a lot of time taking classes online. Now I am in Hiroshima.
  - (Regarding how the university has handled COVID-19) There is a medical center on campus, and because it is a medical school, classes go online immediately as soon as a case of COVID-19 appears.

Vaccine awareness

- **My mother often tells me when I have to take a vaccine. I learned about most of the vaccines I know about from my mother.** I mean vaccines like mumps, measles, influenza, and Japanese encephalitis. But, other than the influenza vaccine, I received them all when I was little, so I do not remember taking them and have only heard about them.
- (Regarding the hepatitis B vaccine, which Ms. Tajima has not taken) I see commercials about it on TV, so I know of its existence. I have not heard about it ever being given to me nor do not remember taking it, but I think I have not taken it. I haven't ever asked my mother about that

one in particular. In the future, I might think about getting it when I get a little older. **Since the disease itself is not familiar to me and because nobody around me has ever had it, I do not hear many people saying whether they took the vaccine or not, so I have never had the opportunity to develop a sense of danger toward it.**

- (Regarding opportunities to think about vaccinations) Since the COVID-19 pandemic began, just like everyone else, I began to wonder quite a bit about what would happen. Before the pandemic, though, I did not really think about vaccinations. For example, for influenza, I would think "Oh, I have an exam coming up, so I should get the flu shot." That is the extent of my awareness.
  - (Regarding education on vaccines at school) I am sure I was taught about the existence of vaccines, but my memory is hazy.

Perceptions of vaccinations

- **In the past, my impression of vaccines was that there was nothing wrong with taking them.** If you take a vaccine, it would surely be effective; you would get sick less easily, and even if you did, you would only have mild symptoms. I never felt any sense of suspicion toward vaccines. **Since the COVID-19 pandemic began, though, I started to hear all sorts of information from every direction. I heard that its vaccine caused severe side effects, and I started to question if everything about vaccines is actually good.** I think I have lost a little trust in the Government since the start of the COVID-19 pandemic.

The influenza vaccine (which Ms. Tajima has taken before)

- I took the influenza vaccine back when I was taking the entrance exams for high school and university. I thought all my effort would go to waste if I caught influenza and had to skip the exams. My parents paid for the vaccinations.
- I was aware that the vaccine can prevent influenza, and that it can make it so you only experience mild symptoms even if you do catch it. There have been times I think I caught it even though I was vaccinated. One such time was during my first year of middle school. After I learned about the effects of the vaccine in high school, I thought that maybe I had only experienced a mild case. Once I knew that there is variation from person to person, and about the mechanism in which the body produces antibodies after being injected with weakened viruses, I started to think that the vaccine does not offer total protection.
  - (Have you ever felt that knowing more increased your concern?) I have taken the influenza vaccine a number of times, so my personal experiences and my knowledge mean I have not been very concerned. Because I have taken the vaccine so many times myself and was okay, I do not feel that it cannot be trusted. As for the COVID-19 vaccine, though, I am concerned because it is an RNA vaccine, so it is different from vaccines I have taken in the past.

The cervical cancer vaccine (which Ms. Tajima has not taken)

- (You said you have not taken the cervical cancer vaccine, but what kind of communication did you have about that with your parents?) I heard from my mother that there is the risk of cervical cancer, and while there are parts I cannot remember, I do remember learning about the dangers of the cervical cancer vaccine at school or online. I think that was right around my first year of high school. **I think my mother probably thought about it and decided for herself not to take it. While I did hear stories about how the cervical cancer vaccine posed quite a bit of risk, we did not discuss the idea of taking the vaccine or not.** I was aware that I was at the target age for the vaccine. But, I only had the rough understanding that it was something young people took. Because I know from the internet that it causes health problems for some people, I was not really leaning toward talking about wanting to take it.

- As for the cervical cancer vaccine, I think there must be many symptoms and side effects when I see stories about it on the news. But **all I ever see on the news about it is stories like, "The vaccine made my health even worse," so I am given the impression that the sense of danger toward the vaccine overshadows the sense of danger toward the disease itself.** Part of me wonders if it is just that experiences vary from person to person in the end.

The COVID-19 vaccine (which Ms. Tajima has not taken)

- When I first heard a vaccine was available, I was impressed and thought I would go take it, like normal. Almost immediately after that, though, **I saw stories on the news about adverse health effects** in which people had negative effects after taking the shot. **I was living with my family at the time, and I thought "I wonder how it really is?" and talked to my family. They also started to feel uncertain, and my thoughts steadily tended toward not taking it.** I wondered what to do when many people in Japan started taking the vaccine. After seeing news and hearing stories about severe side effects, I decided that if I did not absolutely have to take the vaccine, I would not. If I was told to take it, I would. I came to the conclusion that as long as I have the freedom not to take it, I think it is okay not to.
  - (Gathering information on adverse health effects) I read many articles and reports online and from other sources which supported and recommended the vaccine. Because the explanations were given by doctors and researchers, I was convinced on certain points such as the fact that the adverse health effects I heard about do not affect everyone and carry a low probability. While society is debating the many pros and cons of the vaccine, I thought that when I felt like I would not take it, just refusing to take it while staying in the dark about it would make it difficult to refuse it with a firm stance. **That is why I felt I should do research on what sorts of opinions there were in support of the vaccine ahead of time to clarify my own stance and my opinion**. I was convinced that the vaccine helped prevent severe complications; that it makes the infection mild, like with influenza; and that the probability of cases where people die or something due to side effects was extremely low. However, I felt that they were saying different things than what I heard about the influenza vaccine, and if you can still get infected after getting vaccinated, **even if I was convinced by the opinions of supporters, I thought it was not completely trustworthy due to the fact that there has been bad news about the vaccine**. Right now, I could take the vaccine if I was told to, but as long as the choice is up to me, I will not.
  - (Regarding Ms. Tajima's willingness to get vaccinated if told to do so) I am not very reluctant toward vaccinating, so if I am ordered to get vaccinated, I will say "Okay" and do so. I understand both sides. I can be convinced to get vaccinated if I think I am doing so for the people around me, so that is how I will see it if I am told I must get vaccinated.
  - (Regarding adverse health effects that previously concerned Ms. Tajima) I am concerned because some people died or had severe adverse reactions. I am also concerned about news I heard on topics like foreign substances in vaccines.
- Ms. Tajima's communication about vaccines with her family
  - My father's job is related to childcare. Since he works with children often, he felt he had to consider getting vaccinated seriously. We had a serious talk about it, like a family meeting. Although my father did not want to get vaccinated very much, he was concerned he would lose his job and be unable to find a new one if he chose not to vaccinate, got infected, and had an impact on one of the children he works with. In the end, we decided to have him talk to his boss about his decision not to vaccinate, and if his boss was convinced, then it would probably be okay for him not to take the vaccine. The reason he did not want to take the vaccine is because he hates injections. He does not take the influenza vaccine, either. When I was preparing for the university entrance

exam, my mother and I had half-forced him to take the vaccine. It was as if we had to drag him in. My father does not believe in vaccines and thinks he can overcome diseases with the strength of his own immune system. So he would not get a vaccine to begin with. I am not sure how I feel about my father's views, but I thought it is best to consider one's position at work.

  - **My father came to the conclusion that it is not good to get vaccinated when you are not convinced you should and just want to go with the flow**. This is something he thought of on his own. He came to his current choice of action after concluding that because the vaccine is not mandatory, his feelings should be respected. My mother said she wants him to avoid getting vaccinated if possible, but if it is what he wants to do, then she will respect his decision.

- (How do you feel now about deciding to go unvaccinated?) Social welfare-related studies involve quite a bit of practical training. The other day, while consulting a teacher on which practical training site to attend, I asked if I would be barred from the site for not being vaccinated. I was told not to worry and that it would not prevent me from being able to attend practical training because people are free to decide whether to get vaccinated or not. I am blessed to be in an environment where my will is respected. Right now, I am satisfied with my decision.
  - (Regarding social pressure) Some time ago, I heard from an acquaintance that everyone had taken the vaccine. There were times I felt that if everyone was taking it, I should too, but after learning that was not the case, I stopped thinking about it very much.
- Classes at Ms. Tajima's university
  - One professor talked about their own experience getting vaccinated and the mechanisms of how vaccines work as part of a class. Because of the current circumstances in society, this was one lecture provided as a special addition to the curriculum. I learned about the mechanism and how the COVID-19 vaccine differs from other vaccines. The lecture only focused on providing the facts, and the professor did not share their opinion. I do not know if the professor was vaccinated. By taking that class, I grew a little more concerned about the COVID-19 vaccine compared to other ones because it is so different.
- Vaccination status for those around Ms. Tajima
  - I do not know much about my friend at university, but I think some people have taken it. I see my friends in Nagasaki during summer vacation, and every time we meet, we talk about the vaccine and how we have not taken it. All of the friends I met said they have taken it. Because I have obligations like practical training, those around me seem to think I have taken the vaccine, but they seem relatively accepting of my personal decision when I tell them I have not.

Ms. Tajima's trust in healthcare

- In general, I have quite a bit of trust in healthcare itself, but I find that I feel uneasy about new medical technologies as a whole. The standard is whether I think I can trust it based on many past examples and results. In that sense, I trust the vaccines I have taken in the past for diseases like mumps, chickenpox, and influenza.
- (Regarding family doctors) When I lived at home in Nagasaki, I had a family doctor. I have not found one in Hiroshima yet. **It is much better to have a family doctor.** The COVID-19 pandemic made me think about this, but **because they know basic information about me**, I find it much easier to talk to a family doctor. I think what is good about a family doctor is that they can reference things that happened to you in the past, such as what you caught before and how it affected you. It would be difficult to go to a new hospital if I had COVID-19-like symptoms. It is easier to visit a family doctor.

- My family doctor is a local internist that my whole family sees. Our family doctor sees patients by appointment only now, so I only get to ask them questions when I am there for some other reason. It would be difficult to go see them if I just wanted to ask about vaccines.
- (Regarding feeling hesitant to visit a new hospital) With the way the world is today, I would feel somewhat uneasy to go to a hospital I have never visited to tell them I think I may have COVID-19. I would wonder what they would think of me.

4.2.2. Mr. Yamamoto

Basic information

- Male, 28 years old, lives alone in Amagasaki City, Hyogo Prefecture. Full-time company employee.
- I am an engineer and asset manager in the industrial gas industry. We use various types of machines and other equipment to supply our gas, but my work is more like managing that equipment and conducting on-site operations. I got into this line of work as an extension of my research. My company is a place where I can utilize my knowledge of chemistry.
- My major in university and graduate school was biology. The research I conducted for my master's degree was on the mechanisms of Alzheimer's disease.

Vaccine awareness

- I am aware I am eligible for the COVID-19 vaccine through reports on the news and the vaccination vouchers that were sent to my home. I also learned about vaccines during school education. I learned that women would become eligible for the cervical cancer vaccine at a certain age. I think it was during elementary school. I think they gave us a handout during elementary school that I gave to my parents. It was probably about the vaccine.
- Regarding vaccines for adults, **I have not actually taken any, and I am certain there are not any I am eligible for**. Many of the women around me have taken the cervical cancer vaccine. There were also some people who did not take it because they did not understand its risks and benefits. They included my girlfriend, my friends at university, colleagues at work, and my older cousin. It is not as if we had frank discussions about HPV. Rather, because I studied at a biology laboratory, there are times people ask me if the vaccine poses any risk.
- The Hepatitis B vaccine (which Mr. Yamamoto has not taken)
  - **I have not taken the Hepatitis B vaccine, and I do not think I ever will.** I think you can opt to take it as an adult if you pay for it, but I do not know very much about hepatitis B, and I have the impression that it is something far away from me, so I did not take it. **My impression is that it is similar to HIV. This might be the wrong way to put it, but I do not think I will get infected with something like that, so I feel like I will not be at risk if I am careful.** I only ever hear about hepatitis when there is something in the news about it. I have not done in-depth research on the disease.
- The influenza vaccine
  - I have only taken the influenza vaccine in my third years of middle and high school, when taking entrance exams. I took it after my parents said, "You have exams, so you're taking it, right?" At the time, I did not know if I was susceptible to influenza or not, so I just took it. **Other than one time in my first year of middle school, I have never caught influenza. I will not get infected and I do not face any risk from the disease itself, so I will not take it.** My current stance is I will take it if I am ordered to by my company.
- The COVID-19 pandemic has given me my first opportunity to think about vaccines for myself.

The COVID-19 vaccine (which Mr. Yamamoto has taken)

- (What factors caused you to hesitate?) **There were two factors: the vaccine was granted regulatory approval very soon after it was developed compared to other vaccines in the past, and new technology was used to develop it.** Almost everyone in Japan has taken the COVID-19 vaccine, and I thought about taking it myself, but I also wanted to look up **if it was really safe for the human body and if it would have no harmful effects on me**. I heard various stories in the news, and at first I listened to simplified explanations about it from commentators on TV shows, but some of the information was contradictory and I did not understand. So, **I tried reading some of the paper from the original author who was involved**

in the development of the vaccine, which I found to be quite reliable; and I asked the professor at my former laboratory. I feel like **for someone who had felt uncertain, I was proactive about seeking information I could consider reliable.**

- I actually had strong feelings of doubt as to whether it was really a good idea to put the vaccine into my body. I think I did a good job researching the vaccine compared to those around me.
- At my workplace, there was no feeling of pressure to get vaccinated. There were also days they said getting vaccinated could be considered a paid day off. There was only a bit of PR, like when the CEO gave a presentation and said, "I took the vaccine." We had a sort of manual for responding to emergencies, and the company tried to keep an attendance rate of 50%. However, since I am a junior employee, I often have things I need to ask the senior employees, so I am going into work almost every day. I felt somewhat concerned about getting infected, but I thought I had no choice but to just be careful because it is our busy season at work. I was more careful than others, such as by not talking to anyone without wearing a mask, and commuting to job sites by bicycle because it was allowed. It may be because Amagasaki City is close to Osaka City, but I feel like we had many infections near the beginning compared to other places.
- Regarding unknown side effects
  - On the topic of unknown side effects, I had a quick look at a study from some country that said there may be side effects that emerge. That might not be accurate, but I think nothing will happen because in theory, the vaccine is expelled from inside the body, but **I thought that the chances of something happening are not zero**. (Did you weigh those risks against anything else?) I am not currently infected with COVID-19, but I have heard people who recover from it can experience persistent headaches and smell dysfunction. There has been some talk on the potential of the COVID-19 vaccine to decrease the chances of those happening, so I have weighed it a bit. **While the unknown side effects are nothing more than unknowns, people are definitely experiencing smell dysfunction, so I thought it would be the logical choice to prevent that.**

Gathering information

- I used the internet and the news on TV to gather information that would definitely be accurate, like what percentage of the population had been vaccinated and when younger people could get vaccinated. I took a somewhat neutral approach regarding information that needs more in-depth, scientific knowledge without placing too much faith in what most of the experts on TV were saying. For example, different doctors and experts on different TV stations were saying different things, and I did not know who to believe. For instance, they disagreed when discussing side effects, with some saying there were people who were left with extreme long-term complications, while others said there was nobody like that, or that those sorts of things can happen with any type of vaccine.
- I had a quick look at the paper's abstract and learned that it uses new technology and that – to put it simply – the information would be gone in about a week without being incorporated into your own genes. My first impression was that even though the method was new, the level of danger it presented might not be so high.
- I am not sure if side effects are guaranteed to occur during that period, but I talked about it a bit with a university professor, thought that it would probably be safe, then decided to take the vaccine.
  - That professor and I have been in contact with each other for some time. Even after I entered the workforce, I have visited him to introduce my company to him. We have a somewhat close relationship, and we also email or call each other. He is also famous, and when we are talking, I can tell he is knowledgeable on various topics. **He is the person I consider to be the most trustworthy for scientific topics, so I consulted him.**

The vaccines are made using genes, and my professor is conducting research on genes, and **while I believe doctors definitely have such knowledge, I find it easier to trust people who are involved in conducting research.**

- Their department is actually within a department of engineering, in a field that deals with topics close to biotechnology. Our laboratory just so happened to be somewhat close to medicine, and our research examined topics like the mechanisms of diseases.
- To give you a quick summary, I asked the professor something like, "What do you think about the COVID-19 vaccine?" or "Are you going to take it?" He told me, "I think I'll take it," "As it said in the paper, I do not think mRNA will remain in the body and cause harm, so it will be okay." The professor took the vaccine even earlier than I did.
- I think what allowed him to make that decision in the end was that he was convinced it would probably be safe, even if it was not completely safe.

- Regarding the scientific aspects, I normally never think about vaccines, and I only did this sort of research for the COVID-19 vaccine. In Japan, I think any regulatory approval that has to do with medicine moves very slowly, not only for vaccines. Despite the fact that the COVID-19 vaccines were developed overseas, they quickly cleared the approval process. That is why it caught my attention and what led me to investigate.
  - Clinical trials for pharmaceuticals have various phases like Phase I and Phase II that they usually take much longer to complete, sometimes ten to fifteen years. It seems the COVID-19 vaccine completed all of these phases in under a year, and I think that is extremely fast. My original experience with these phases was during university, where I obtained specialized knowledge in this field, such as when iPS cells were quickly granted regulatory approval. During the COVID-19 pandemic, various companies including Japanese companies like AnGes, Inc. were working on developing COVID-19 vaccines, and I learned through sources like the news program The Dawn of Gaia that they were still in their first or second phases.
- The complexity of information
  - The paper is in English, so that's the first reason it is difficult to understand. There were not many websites or people who could provide unbiased interpretations of its content, so it would have been nice to have a resource like that.
  - For example, there could be a site compiled by a social network or similar service to provide that information in a simplified and unbiased manner. For example, Professor Yamanaka at Kyoto University is providing a site like that, but it is only for the COVID-19 vaccine. But, I would like something like that. Professor Yamanaka probably created his site because nobody else was doing so for the COVID-19 vaccine, but Professor Yamanaka presented the paper in an unbiased manner and provided links. It felt like he was introducing the paper without adding too much of his personal opinion. The amount of information was enormous, but I thought it was important as a place just to put information where various types of people could accept it. While it would have been better to have some interpretations, I thought it was a good fit for the COVID-19 pandemic. I think it was something like a website that was specifically created for these circumstances.
- (Did your anxiety go away as you gathered information? Or did you find yourself with new concerns?) It did not make me feel that the vaccine is 100% safe, and I actually wish I had learned more about it, but the fact that I did my research helped convince me. That does not mean I was relieved, or that my feelings of anxiety increased. It was neither.
- (What did you mean by "evidence" in your post?) For example, since the COVID-19 vaccine was created by combining various scientific techniques, I think "evidence" would mean examining each of those technologies one by one. When we look at each one of those technologies, some have already been around for a long time, so we would look at those. For example, we can increase the number of vaccines by incorporating genes into the *E. coli* cells

used to produce vaccines, or that messenger RNA is different from DNA (a form of genetic information), so it is expelled from the body relatively quickly. When we look at the whole picture, we might get confused, but if you examine it in detail, it might not be very complicated.

  - I do not know if this was the right choice, but I wanted to feel the same sense of conviction I have when I know I have decided something for myself, like when I have started a new job. In that same manner, even if the vaccine is not 100% safe, I can feel convinced because I know I chose to take it.

- Conversations Mr. Yamada had with his family
  - My parents' home is in Hokkaido, so I live far away from my family, but my younger brother is a health professional. Because of that, he took the vaccine very early on, and he had to take it regardless of his own feelings. I just got a message from him on LINE saying that he took the third dose today. Because my family is like that, my parents got vaccinated like it was only natural. I think I may have contacted them to say, "I'm taking it" before I took it, but we did not really discuss it. My entire family has taken it, and my younger brother is a health professional so he did not have to rely on a physician to get vaccinated. My parents decided to get vaccinated as early as possible, recognizing they were related to a health professional, and I think they all took the vaccine without giving it much thought.

Mr. Yamada's relationships with the people around him

- (Did you share any of the information you found over the course of your research with your friends or acquaintances, or give them any advice?) There were times I did that. One of my colleagues was quite uncertain, and while I did not tell them to absolutely avoid taking the vaccine, I talked to them about it just a bit, saying "Here is some information that I found. Because it is expelled from the body quickly, don't you think the benefits are greater?" I did my best to try to talk to them in an unbiased manner. It was not that I wanted them to get the vaccine, but that colleague ended up making an appointment and taking the vaccine shortly after we talked. It is not as if I was completely sure that the vaccine would be safe, so I did my best not to phrase it like, "It will definitely be safe."
- (Are there many people around you who did relatively in-depth research like you did?) Not very many, I think. I think I did more research than most. Many of my senior colleagues have backgrounds in chemistry, and there were times they asked me about it. That makes me think nobody did as much research as I did. I tend to approach most things in that same manner, not just vaccines. I have feelings which are based on my senses – like if I look at a picture and think that it is pretty – but the first things I usually tend to think of are things like which option carries the highest probability of success. It is not as if I started thinking of things that way since my childhood. I started to think of things that way around the time I was in university. But what probably happened was that I had some experience where I could not score high on a test by studying without thinking much about it. Instead, I started thinking about what would probably be on the test, and worked my way backwards from there to pick what items to study to earn a high score. That was sometime from the end of high school to university. I do not view myself as an extremely logical person. There are also times I am spontaneous. If there are times I think of things in mathematical terms, there are other times I do things without thinking about them at all. I can be somewhat spontaneous about participating in some events, and when I do so, I do not regret it. When I am deluged with tasks at work, I sometimes do not even try to put them in order and just take care of tasks as the emails arrive. Then, when I look back on that, I sometimes find that I took care of something early that I should have left until later.

Mr. Yamamoto's thoughts on vaccinating his own children someday

- It is likely that I will end up being more knowledgeable about vaccines than my wife, so the way I will approach it will be to focus particularly on the ones that the municipal government sends free vouchers for, then ask my own parents which vaccines I have taken, and – while it probably will not be as much as I researched for the COVID-19 vaccine – I will take a quick look at what sorts of things are written about the vaccines to make a decision. I think we will probably end up giving our children the vaccines that all the other parents are giving theirs. While I do not know much about the cervical cancer vaccine, regarding the other vaccines, I have not heard or seen any cases in which people died or became disabled because they took them. It may be that I am just not aware of such cases, but I have not heard anything like that. I think there are diseases where you will not get infected or experience symptoms if you get vaccinated, like mumps or measles, so I think I would get my children vaccinated.

Differences in how Mr. Yamamoto perceives routine and voluntary vaccinations

- The significance of a vaccine being on the routine schedule is a major factor. Those must be on the schedule because those diseases can cause big problems if someone were to get infected with them, or other factors like that. **I think having them provided through public funding would be more effective at preventing major diseases.** I do not know if vaccines on the routine schedule are actually free, but I have the impression they are the types of vaccines that are subsidized by the local governments. In that sense, **the fact they are free means the Government is willing to go to the trouble of devoting public funds to ensuring everyone gets vaccinated. I trust Japan itself quite a bit.**
- I do not know on what level the decision is made to make a vaccine a voluntary one, but as to why they are probably classified as voluntary, **my impression is that they only apply to rare cases, like when people are unlikely to get the disease in question whether they get vaccinated for it or not.** I have arrived at the conclusion on my own that they are for low-risk diseases that only very careful people are concerned about, like fevers that people get in Africa. I do not think they are diseases with very high prevalence.

Social pressure

- While I was not influenced by social pressure when I decided to take the vaccine, I feel that there is a very strong prevailing attitude to vaccinate. While I did not experience this myself, I have overheard people who were talking somewhat loudly and saying things like, “You didn’t take it? Why aren’t you taking it?” It is their right to wonder why others might not be taking it, but I thought it would be better not to pester them about it and make them feel cornered. For example, while I think there may be some people who truly do not give it much proper thought and decide they will never take it, there are also some people who have preexisting conditions or face other risks that prevent them from taking it. People like that have no obligation to tell others openly about their conditions, so as long as they might have some background like that, I think it is sad that they have to be asked about it.
- (What do you think about vaccine mandates?) I think they are not good. We do live in a democracy, after all, so **of course I would prefer to be able to choose according to my own free will**. As a practical matter, there is the theory that COVID-19 is not very common in Japan because of our high vaccination rate, but even if it were, I still think people should be able to decide for themselves.

Mr. Yamada’s impressions of the term “vaccine hesitancy”

- I have never heard of the phrase, “vaccine hesitancy.” It gives me the impression of someone who does not want to get vaccinated without knowing much information or doing careful research. It reminds me of “anti-vax” or some ideology like that. It gives me the impression of people rejecting some authority – maybe the Government, maybe not – whether they have any information or not. While there was nobody like that around me, there was one older

man at my workplace who said things like, “If everyone else gets vaccinated, I won’t have to.” I think that the prevailing theory at the time was that the COVID-19 pandemic would subside if the vaccination rate exceeded 50%, and that was why he said that. I do not think he has taken the vaccine. (What did you think about that opinion?) I didn’t really think much of it. Just, “Oh, so that’s how you feel.” We did not know much about COVID-19, so I just thought there were many different people with many different viewpoints when I saw people like that.

- As for myself, I think I am more skeptical than people who take the vaccine without thinking about it because everyone else is doing so, but I am nowhere near the level of an anti-vaxxer.

About the MROC

- Everyone in the community was friendly or neutral, and they never attacked me, so I thought it would be nice if the world could be like that. While there was not as much two-way communication among members as I thought there would be, looking at everyone’s comments, I felt that there were many warm-hearted people. Nobody took a stance like, “I took the vaccine, so you should too.” Rather, I feel like they were more soft-spoken about it, like, “I took the vaccine, and this is why I made that decision.” We had some self-introductions at first, where people would say things like, “I’m a nurse.” That was quite good. Maybe because that was because I was looking at the post with a general idea about what kind of person they were, even though I could not see the people behind the posts.

4.2.3. Mrs. Umeda

Basic information

- Female, age 39; lives in Kawasaki City, Kanagawa Prefecture with her husband and two children. She is an employee at a private university.
- I have a family of five: myself, my husband (age 37), our eldest son (age 8; in second grade), and our eldest daughter (age 5; second year of kindergarten). We live in Kawasaki City. My mother and father (both around age 67) also live in Kawasaki City, about a thirty-minute drive away. Mr. Umeda works full-time and we regularly receive help from them, so they feel very close to us (my father was over today, as well). My younger sister (age 36) is married and lives on Shodo Island.
- I am a staff member at a private university, where I started working immediately after university. I am very busy now, at the beginning of the year, and my remote work has decreased to about once per week. I also serve as proctor for the center test. My Saturdays and Sundays look like they will be busy due to my work as proctor. My husband and I split child-care duties by about an 8:2 ratio, with me doing more. My husband gets home late, and on days off, it is difficult for him to take care of the kids in terms of skill. My husband is a staff member at a different university.

Vaccine awareness

- Except for the COVID-19 vaccine, I know other vaccines exist through announcements from the city and posters at hospitals.
- Kawasaki City distributes notices once a year or so that say things like, "You can get such-and-such vaccine at these ages," or "These are the types of vaccines there are for adults, like the shingles vaccine." I do not know if Kawasaki City sends those notices depending on recipients' ages. But, this allows us to know what vaccines we can take at which ages. The notices **also include information on vaccines that appears alongside information on cancer screenings and health checkups that are subsidized by the city**. There are not many types of vaccines, so is usually just a bit of information provided on the back of the notice.
- One of the posters I saw was for the shingles vaccine, which I saw when I took my child to the dermatologist's office. That is about the level of my awareness. They put up posters in places that are quite visible.
    - (What sorts of vaccines did you become aware of through that type of information?) The cervical cancer vaccine. I was not sure if I had taken it or not, so I checked with my mother. I do not really recall ever talking about it with her when I was the target age, and I do not remember ever being told to take it or not to take it. That vaccine is provided at an age when you would remember, isn't it? I asked my mother about it after seeing a poster. It was also being discussed in the news, so I was very curious if that vaccine was in my body, too.
    - **I also read that a vaccine for shingles recently became available and I wondered if I was eligible to take it.** I have heard of the Japanese encephalitis vaccine before, so I think I have taken it, but **there are many vaccines now that did not exist when I was young**. I am sure we did not have vaccines for mumps or chickenpox. We did not have the rotavirus vaccine, either. So, I do not know which ones I have in my body. There was also measles. There was a measles outbreak about ten years ago. The university students were about the age that had not taken it. So, our university conducted antibody tests on the staff members, and it was a very sad story for those whose antibody levels were down. I personally felt like one of the affected parties at the time.

Mrs. Umeda's awareness toward children's vaccinations

- My awareness toward children's vaccinations is different, because they get so many shots right after birth. After our children were born, **we read through the maternity passbook, websites with vaccination schedules, and vaccination vouchers**. There were some that were routine or voluntary, and we read up on all of those, and got them for our kids. We were in a huge panic. There are so many. Some cost money, and some don't. Among them, some hospitals provided voluntary ones and some that did not, or they had rules about how many vaccines they would give at a time. I had a very difficult time grasping all that with my first child.
  - First of all, I did not know what vaccine to get them at which month. Then, I did not know what intervals to have when getting them the ones that have three doses. There are rules like you cannot give live vaccines or non-live vaccines at the same time, and depending on the hospital, they have a limit on how many can be given in one visit. Or, how many can be given at the same time. These all made it very difficult.
  - (What support did you receive to make arrangements?) I used websites that offer apps and calendars as references. There is a kind of child-rearing support that lets you manage vaccinations. They tell you when your child needs which vaccines depending on their date of birth, and if those vaccines are voluntary or live. Apps that help you do the scheduling.
- **You do not have the time or mental energy to carefully choose information regarding vaccinations for your children. I felt rushed and hurried to get my child vaccinated, thinking the vaccines were absolutely necessary**, but the vaccine schedule calms down after age 1, and I started to wonder if it had been a good idea to vaccinate them. Also, they had a fever as a side effect, and that made me wonder if vaccinating had been the right choice. That was with the Hib vaccine.
  - (What was it that you thought you should have done more research on?) Side effects, of course. But I guess they only have side effects for a short time, so it might be fine. While the side effects children experience from vaccinations they get when they are small tend to not be so serious, it is okay to let them pass you by, but the cervical cancer vaccine can affect your life. I should have done my research to make sure there were no risks like that.
  - (Before your first child was born, did you know getting your child their vaccines would be a hectic affair?) During maternity classes and other preparation services offered to expectant mothers by the hospital and the city, I had been told that vaccinations begin immediately after a child is born. At the time, all I really thought of it was, "Oh, I see." Until then, I had not had much experience with vaccines. The only experience I really had was with the influenza vaccine. So, nobody told me that there are several types of vaccines that would be given, that some of the vaccines could not be given together, or that there are limits as to how many are given at a time. I had previously been indifferent, so I was shocked when I saw the paperwork.

The vaccination status of Mrs. Umeda's children

- At that time, the hepatitis B, mumps, chickenpox, and rotavirus vaccines were voluntary. I watched what the other parents were giving their children, and gave my children all of them, including the voluntary ones. I tried asking doctors and friends who are near me in age. I was working at the time, so my child was in day care. Because going to daycare means you are being placed in a group environment, I had them vaccinated against diseases that can spread in a group environment like mumps and chickenpox. While I would not call it etiquette, I thought getting them vaccinated was the least I could do, so I had them take everything, including the voluntary ones.
- (How did you feel after getting your child vaccinated?) Right now, I do not think I did anything regrettable by having them vaccinated.

Gathering information on vaccines

- **Gathering information is extremely difficult**, especially for COVID-19 vaccines. **It is difficult to know what is accurate, or what is truth and what is rumor**. The tools I use to do my own research are the internet and asking my family doctor for their opinion. I also ask my friends for their opinions.
  - (How were their opinions different?) When talking with my friends, we only really talked about taking it or not taking it. We only wondered what everyone else was doing. While a doctor is just one individual, I am still interested in their opinions, or rather, hearing what they think directly from them. There are many opinions online, and they are different depending on where you look. Social networks have opinions and rumors, and the MHLW's website only offers formal information. I looked at quite a few hospital websites. Rather than the hospitals I use regularly, I found that some hospitals provide information on their websites if you search for it, so I was looking at pages like that.
    - **The level of information on social networks is the same as chatting with your friends.** There are various opinions. No matter what information I see on Twitter or Facebook, it does not have much influence on my decisions. However, I read them because I can see what sorts of things people are thinking, or what sort of trends there are. Comments on Twitter and Yahoo let me do that, too.
    - **(About information from the Government) While I do look through the information about decisions that have already been made, only very formal information is provided.** The MHLW or some public health center wrote something about taking vaccines, but all it said was something like, "Sufficient research has been conducted, so it is safe." It was not very convincing. It still felt like looking at information on decisions that have already been made.
    - (Regarding the opinions of friends) Everyone started getting the COVID-19 vaccine all at once, around the latter half of summer. At first, I thought people were divided on whether to take it or not, so I decided to wait and see what others were doing. It was too new, and while I was not worried about side effects, I was worried about what would happen in the future. Even now, that worries me. On top of those worries, at first, it was important to me to see what everyone else would do, or rather, to see how society would respond.
  - **(What type of information do you consider to be very reliable?) Definitely opinions from doctors. I often refer to what is written on hospital websites or what is written by doctors – not necessarily their columns, but their articles.** I looked at many such websites and articles when researching the COVID-19 vaccine. I wanted to see what the risks of vaccinating or not vaccinating were, or what they thought about something that had been researched for so short a period. At first, I thought it was very scary. That was because it was a vaccine developed so quickly, and I had memories of the very sensationalized news reports on the cervical cancer vaccine. So, I looked up quite a few opinions from doctors to see what they had to say.
  - As for the COVID-19 vaccine, in addition to that information, the prevailing attitude in society made me feel like I had to take it, so I had no choice but to do so. But, I was hesitant at first. It was also a good thing that the target group was not children. I took it because the atmosphere made me feel like there was no choice, but at first, I was not sure what to do.

How Mrs. Umeda wants information to be provided

- **While the most important thing is not getting sick, it is also very important to make sure you do not pay a great price to avoid sickness.** It does not matter if you feel under the weather and have a fever, like you do from side effects, but it is a problem if something

happens that has a negative impact on the rest of your life. While the effects of a vaccine are important, of course, there are times when you have to decide which risk to take.

- (Regarding how Ms. Umeda wishes information was provided) Speaking honestly, **I want to be told about the advantages and disadvantages of taking a vaccine without them being covered up.** After being informed of that, the individual should decide whether or not to vaccinate. **I wish that sort of information was compiled in pamphlets and made available places it would be easily accessible.** There are often pamphlets on each disease placed at hospitals that visitors can take. If they were made available where people go for their annual health checkups, it would be easy for them to take an interest in and read, so I think people would pick them up. The health checkups provided by workplaces are conducted at places like health checkup centers. I think it would be good to put the pamphlets at places like that. Because it can be difficult to get people to pay money to buy books at a bookstore, it would be most helpful if they were distributed free of charge and in places people could get them easily. But at times when a person's mind is in "healthcare mode" – like during a health checkup or hospital visit. Next, I think **it would be good to use the internet, but it can be hard to go to the internet first – I do not think there is anything that drives people to look up information online. There are lots of very comprehensive sites, but I want for there to be something that makes people want to visit them.** They could use commercials. If people are provided with opportunities that make them want to visit those sites, they might find their way to them.

The cervical cancer vaccine (for which Mrs. Umeda is unvaccinated)

- Regarding vaccinating her children
  - My children are not yet in the target age group for the cervical cancer vaccine, but I think it is a little frightening. **Vaccinating a child is not their decision; it is something their parents decide. It is scary to think about a parent's decision changing their child's life.** Children have lives of their own. That means, when I see a child who is still around puberty suffering from the side effects of the cervical cancer vaccine, I think that is a heavy decision for parents to make and it makes me hesitate. To put it another way, I have yet to reach a conclusion.
    - (When does the child become the one who decides?) When they are old enough to take responsibility for their own lives, from around age 18 or as university students.
    - I think I will talk to my children about the cervical cancer vaccine, but even if my eldest daughter says she really wants to take it, if I think doing so is absolutely wrong, I will not let her take it. The reverse is also true. **While it is okay if we agree, if we do not agree, and I say that she cannot do it, she cannot. I think that is still okay when a child is twelve or thirteen years old.** I think that is an age when a parent's will is still stronger.
  - (Regarding how to address the items that concern Mrs. Umeda) I have to say it is **whether or not there are side effects, and at what rates they occur**. But, there is no vaccine with no side effects whatsoever, and I think you can find out what side effects have been occurring if you look it up, so I understand that this is not only limited discussions on HPV. We know that certain side effects appear frequently or can cause severe symptoms – including causing people to develop disabilities – as a characteristic of the HPV vaccine, so that is why I want to know about its side effects. The Government is currently recommending it, but it will be a few years before my daughter is within the target age group, so in the future, I would like to watch over what happens among the children who take it. I will do this by looking it up online and maybe sometimes in the magazines that are placed in hospitals.

- ✧ I have seen information online regarding the rates that side effects occur. I think it was also on the MHLW website. There are also websites from major hospitals that explain each vaccine. I think it was about **one out of thousands or tens of thousands**. It might be unkind to the people who are suffering from side effects to say that these rates are low, but **they were not as common as I had expected**. **However, there is no guarantee that you will not become one of those people who suffers, which makes me hesitate.** I thought they were about as frequent as intractable diseases. But they are more common than expected, so I felt it was frightening to think about going out of my way to take that risk.

- ➢ (Regarding consultations with your family doctor) (Our doctor) sometimes says that people of my generation were the ones to be recommended the cervical cancer vaccine but many people became hesitant toward it due to reports of adverse reactions in the media. When I asked about my daughter, **our doctor's stance was that there is still time before she is in the target age group, so I should keep a close eye on the situation. During the explanation, they said, "In general, it is better to take the vaccine, but since it is voluntary, in the end, I think it is up to the family to decide."** That gave me the impression that while we are not putting it off until later, we still have some time to think.

- Mrs. Umeda's feelings about her own vaccinations
  - ➢ When I asked my mother if she gave my sister and I the cervical cancer vaccine, she said that she did not. When I asked her why, she said, "I remember feeling uncomfortable that the Government was quick and eager to promote the HPV vaccine." When I asked for details, she said that because cervical cancer is related to bearing children, she wondered if she was doing something that could have a major impact on us in the future (including our ability to have children) by rushing with the vaccination. She instinctively thought that doing so would have such an impact. That was still before there were any major news stories on its side effects. But my mother might have perceived it as something that Japan adopted because the U.S. had been pushing for it strongly. At any rate, she said she felt uncomfortable because she could feel the strong will of a foreign country. So, she said that she did not have us take it because her instincts told her it was a bad idea. I might end up developing cervical cancer in the future as a result, but I think that my mother's choice was her way of fulfilling her role as a parent by making such choices. When I heard her explanation, I could feel how my mother felt when she was raising us.
    - ✧ (What are your current thoughts on being unvaccinated?) I am not really thinking about getting vaccinated now. This is something that makes me hesitant when I think about letting my daughter get it. Even after hearing my mother's explanation, news about HPV was going around even before the COVDI-19 pandemic, so it may be difficult for me to begin to view it in a positive light.
    - ✧ (Has there been any interference from your mother regarding your child?) We have never talked about subjects like this. I heard about her explanation as to why she did not have me take the cervical cancer vaccine before my child was born. While I did mention to my mother how I was uncertain about the numerous vaccinations they were giving my child right after she was born, my mother said, "If everyone is doing it, and they are vaccines you have to have her take, then don't you think you should do it?" I thought if she was going to be so straightforward about it, I would get my child vaccinated. That made me realize that vaccines were not something that my mother disliked instinctively anymore.

Other vaccines

- (About experiences with hesitancy toward vaccines other than the cervical cancer vaccine) I

was hesitant toward the COVID-19 vaccine, but I have not thought too deeply about other vaccines. That may be because I am not within the target ages for other vaccines, and even though it may be strange to say so, I do not think they are such a serious issue for my children. The only vaccines my daughter has left to take are the mumps and Japanese encephalitis vaccines, so I would like to have her complete the ones that she has already taken before.

- I do not hear about serious side effects with the influenza vaccine. I hear that people experience fevers or soreness after taking it, but I do not mind symptoms like that. I do not hear about serious side effects and take it every year because I feel the benefits outweigh the risks of getting sick and the risks of side effects. My children live in group settings so I would like to do whatever we can to reduce the risks for all of us.

Trust in the Government and in healthcare

- Since becoming an adult, I have not really felt any uncertainty toward taking or not taking a vaccine. **In the end, I think I have always completely trusted the Government and in healthcare, and that I would take a vaccine if I was told I was eligible for it. But when there was the scare over the cervical cancer vaccine a while ago, I realized that taking vaccines is not perfectly safe for everyone.** I started to pay more attention to vaccines since then. I also tried doing a bit of research. Even though I say that, all I have ever really taken up until now was the influenza vaccine, so I feel like if so many people are taking a vaccine and it is normal, then it will probably be safe.
- I did not even think about safety, and thought that it was a given. But there is no guarantee that it will be safe; I realized that it is not something that guarantees your good health. I started to think that way after seeing reports in the news. There may be times the Government recommends the cervical cancer vaccine and times when it does not. At the moment, it is recommended. When I saw those news reports, I thought that I must use my own judgment and take responsibility when taking a vaccine, because not every vaccine is guaranteed to be safe.
- (Regarding media coverage of the cervical cancer vaccine) Because the Government recommends it, **people are taking it, but it seems like everyone is doing so without understanding that it can result in life-changing side effects**. Of course, I know that those side effects do not occur in everyone that takes it, and the stories in the news are only about a few people. But people need to **understand that people are taking the vaccine without understanding that such side effects could occur**, and that any of us who also took it could have been that person. did not understand that could happen when they should feel like such side effects could happen to them, too. Even though I had never given much deep thought to vaccinations, when I put myself in the shoes of the people in the news, I got scared and felt I had to be responsible for myself. I think people need to think more carefully about each vaccine they put into their body.
- (Has there been a change in your overall perception of vaccines?) Yes. **However, I still do not hesitate to take or give my children the vaccines that are given to children, or the ones that have been used for a long time without causing any significant uproar.** By the way, the period I was vaccinating my child was right after the news reports on the cervical cancer vaccine came out. I did not have any leeway in vaccinating my children, and it was common practice for everyone to vaccinate their children. I did not feel like I had any room to make a choice.

Routine and voluntary vaccinations

- (What is your impression of routine and voluntary vaccinations?) **Routine vaccinations are the ones you absolutely have to take. I might also think of them in terms of whether they are free or not. Some of the voluntary vaccines are expensive. But there is no option not to take them because they are expensive.** While some are affordable, others are priced in the

tens of thousands of yen. While I thought that was within what I could afford for the health of my child, I still thought they were expensive. There were also some around me who said they did not give their children those vaccines because they were too expensive. The hepatitis vaccine and rotavirus vaccine cost ten thousand yen or more per dose, and some of them need to be taken two or three times. While I think some families have strong preferences regarding vaccines and chose not to vaccinate, this is completely unrelated to that. They said they could not take them because they were too expensive. For my family, there was no vaccine we did not take because it was too expensive. I thought of it as a matter unrelated to having money or not.

- Personally, I think vaccines like the influenza vaccine are expensive, too. My children have to take two doses. Each dose is 4,000 yen, so if each child gets two and I get one, that makes 20,000 yen for the three of us. That's expensive. (Why do you feel it is expensive?) I ask myself if it usually costs that much for general medical expenses or hospital visits. While this is partially due to health insurance coverage, when I get sick in general, I do not have to pay the hospital tens of thousands of yen. Unless I'm having surgery. While I understand those vaccines are not covered by insurance, **I have the impression that among general medical expenses, vaccinations stand out as particularly expensive.**

Accessibility

- (Regarding the difficulty of making appointments and accessibility) **Accessibility is not a factor when I think about not taking a vaccine, but it is a factor that makes it difficult to change hospitals and things like that.** This is also the case for appointments, but can be a factor when you have to go get your children vaccinated while working. Some hospitals also let you take three or four vaccines at once. I did a lot of research to pick hospitals like that.
- (What types of hospitals do you consider to be very convenient?) Lately, it is hospitals where you can get a vaccine even without an appointment. Regardless of my child's physical condition, any hospital that lets me take them to get a vaccine on the day that is convenient for me is a good hospital. For example, you sometimes have to cancel an appointment if your child gets sick. Also, regarding simultaneous vaccinations, it would also be a great help if the hospital allowed the child to get as many vaccines as the parents are okay with, without limiting you to what the Government says is okay.
- (Regarding support from Mrs. Umeda's workplace) We were given paid holidays to get the COVID-19 vaccine and to recover from its side effects. They let us take two days off for each dose. I have childcare leave available to take care of my children, so I have been using it to take them to get vaccinated. That type of leave is granted according to the age of the child. It can be used for medical checkups and other things like that.

Mrs. Umeda's impression of vaccine hesitancy

- I feel like vaccine hesitancy does not refer to people like me who are uncertain about particular vaccines, but instead those who have an instinctive dislike of vaccines themselves. I think there is a certain number of those people, and that is how they think. There are also people who say things like, "Vaccines are poison," or are in total denial toward all vaccines. I think it refers to people like that. I am not in total denial, so I am not like that. I do not deny that there are people like that, but because vaccines are something that the Government decides to a certain extent, so I wonder what their reason is for having to go so far to deny them. One person around me has not allowed their children to get vaccinated at all. There must be some diseases that are not prevalent in Japan because everyone is vaccinated. There must be some areas like this where everyone is cooperating. In that context, part of me wonders if it is okay for them to deny all vaccines. I do not sympathize with them.

Mrs. Umeda's thoughts on the MROC

- It was a wonderful experience to be part of a community where I could hear the honest opinions and feelings of the various people in it without commercial bias. It allowed me to be exposed to people of various ages and with various family situations, and with attitudes that were similar to mine and that were different. I do not have other opportunities to talk about vaccines that much.

4.2.4. Mrs. Igeta

Basic information

- Female, age 41; lives in Itami City, Hyogo Prefecture with her husband and three children. Full-time employee (in a field related to welfare)
- I live together with my husband (age 42), my daughters (age 18; grade 12, and age 16; grade 10), and my son (age 14; grade 8). Both my husband and I were born and raised in Hyogo Prefecture and still live there.
  - One reason I took the COVID-19 vaccine was because my daughter had university entrance exams.
  - My husband works in sales and is never home, so that is another reason why my entire family took the COVID-19 vaccine.
  - (About Mrs. Igeta) My work involves services provided in-person at a welfare facility, so I do not work remotely. That is why I wanted to get vaccinated. My workplace is a day service that provides, for example, after-school care for children with disabilities. Even when schools are closed, we absolutely must stay open, so I thought it would be best to take the COVID-19 vaccine to protect both myself and our users. We also discussed this at a company meeting, and I was one of the first people to take it. I had my second dose in August.
    - ✧ My working hours are 9:00 to 17:30, five days a week. Our users' ages range is broad, from age 2 for the smallest children to around age 18 for the oldest children. The small children might come in early, then go to kindergarten or nursery school later in the day.
    - ✧ Regarding my qualifications, I am a certified childcare worker. In the type of childcare provided at my workplace, we work with children with disabilities to help them acquire the skills they need for daily living. I mostly work with children with developmental and mental disabilities.
    - ✧ I started working in this field about ten years ago. I chose this field of work because I liked children to begin with and because I could do it without being certified as a childcare worker. I obtained my childcare certification while working. Before that, my role was completely different; I was a member of the office staff.
  - My husband's parents live in a neighboring city. My father has passed away, and my mother (age 74) lives by herself in a neighboring city. I go to visit her quite often, but it is not as if she needs long-term care, so I just go to see her once in a while. Like, by taking her grandchildren to see her. I do not keep in touch with my in-laws very frequently, but I talk to my own mother often over LINE or on the phone.
    - ✧ I am basically the only one who looks after our children. I spend more time at home than my husband, so I see the children every day and talk to them often.

Vaccine awareness

- I was aware of the mandatory ones, the ones you have to get for your children before they turn one. For the voluntary vaccines, I see them as something that's up to the individual, or something that you only take when it is best for you to do so.
- I do not remember much (about the vaccines I received when I was a child). All I really remember being given is the one that leaves a scar on your arm. I remember catching mumps and chickenpox once each, but I do not remember if I was vaccinated. I remember that both cases occurred during the later grades in elementary school. My parents never said anything like, "You caught it even though you were vaccinated," so it is most likely that I was unvaccinated.

- (Do you want to check what vaccines you received in the past?) While I did sometimes wonder if I had taken certain vaccines when my children were getting them, I never went so far as to check. I am not very worried about whether or not I took a vaccine.
  - I was told that if I was not immune to a certain disease – I forget which, maybe measles – then I would have to be vaccinated by the time I was due to give birth. I was tested, they detected antibodies, and it was okay in the end, so I do not feel regret toward the vaccines I did or did not take. I was told that if I had never caught a certain disease, there would be a chance my unborn child could be affected if I got infected with it during pregnancy.

Cervical cancer vaccine (which Mrs. Igeda has not taken)

- Looking back, I realize that I did not have very many opportunities to think about vaccines, but the cervical cancer vaccine is the one I thought about the most. **I have two daughters and deciding whether to get them vaccinated or not was the first time I was ever uncertain about a vaccine.**
  - (On communication between Mrs. Igeta and her own parents regarding the HPV vaccine) The vaccine was not available when I was that age. It became available when my eldest daughter was eligible for it, there was a controversy over its side effects soon after and vaccinations were suspended across the country. She aged out of the eligible period while it was suspended, Vaccinations have now resumed and my younger daughter is now eligible, so I am wondering what to do.
  - (Will you let your daughter decide?) When my eldest daughter was eligible, I asked her to talk to the girls around her and see if they had taken it. She did so and not many – actually, none of them had taken it. We let her period of eligibility pass us by with the feeling that nobody else was taking it. When deciding whether or not to give them the influenza or COVID-19 vaccines, I asked them if they wanted to take them or not.
  - (Regarding Mrs. Igeta's communication with her daughters about the cervical cancer vaccine) We discussed it after she received information about it from her school, when we received a notice from the city that vaccinations would resume, and when we saw it being reported in the news. We always talk about how we are uncertain if she should get it. It was the same for the COVID-19 vaccine. But, with the COVID-19 vaccine, the number of other children around her who were taking it increased rapidly, and my daughter started thinking, "Maybe I should get it, too." She then took it. But, I think she is uncertain about the cervical cancer vaccine because not many of the people around her are taking it. My daughter might be the type of person who is sensitive to their surroundings.
  - When I took the COVID-19 vaccine, however, I decided to do it when nobody else around me was. I was also one of the first people at my workplace to take it. I look up how many people have decided to take a vaccine online and other such information. Then, instead of worrying about what those around me are doing, I decide for myself if I should take it. It seems that children are more sensitive to what those around them are doing.
- Regarding reports on side effects in the media
  - (Regarding coverage on the HPV vaccine in the media) Although I only saw TV coverage of the vaccine, it left an impact on me because it was a special on people who could not return to life as normal because they lost their ability to walk or got too sick due to adverse reactions. I thought it would be best to avoid getting that vaccine for my own child because it would be difficult if that were to happen to them.
  - I think vaccinations were suspended soon after that report. The vaccine was new, so **it was a vaccine people were not used to hearing about, and it was not something that could completely prevent someone from infection, so I thought it would be best to take a wait-and-see approach and not vaccinate my child**. But, I also saw reports that it had high vaccination rates overseas, so I guess I will have to wait to see what happens in

Japan in the future. The information that the vaccine cannot completely prevent the disease is also something I learned from TV.

- (Regarding the period before there were reports in the news on adverse reactions) Given the rate of side effects, I thought it would be okay to take if it meant it could help prevent severe symptoms in the event of infection, even a little. I may have had a positive impression of the vaccine before it received wide coverage in the news. **News coverage has a significant impact. That is where people get their initial information from.**
  - (Regarding the opinions of people around Mrs. Igeta) I talked about it with the friend I mentioned earlier as well as the mother of my younger daughter's friend, but I got the impression that all three of us have been swayed for the same reason, namely, that the vaccine can cause adverse reactions and that it does not completely prevent infection.
  - (Which adverse reactions concerned the three of you?) Everyone saw similar reports in the news, and it was the stories about people who were no longer able to lead normal lives. Specifically, the news talked about people who could not stand up or always had to wear sunglasses to prevent dizziness. It felt like the others also had that perception of the adverse reactions. If the vaccine only caused a temporary fever, it would not have been a problem, but because the news put together a special feature on people with serious adverse reactions, it left an impact. As a result of that special report, I began thinking that could happen to us, too.

- Regarding costs
  - (Regarding a comment Mrs. Igeta made in the MROC that it is expensive when a vaccine now costs 30,000 yen when it used to be free) My friend's child is two or three years older than my oldest daughter, so she missed the period of eligibility by just a bit, but I heard that my friend's child said she wanted to take it. And when I talked to my friend, we talked about how 30,000 yen is expensive even though it does not provide complete protection. That friend was pretty much the only person I talked to about it. While she missed the period of eligibility while waiting, because there were reports that it was going to be provided for free again, it may have turned out that my friend's daughter took the vaccine in the end. The last time we talked, we talked about how we heard it was going to be offered for free.
    - The mumps vaccine is 5,000 yen, the chickenpox vaccine is 7,000 yen, and the influenza vaccine is 3,000 yen. When I think of that, I see that it costs ten times the price of influenza vaccine. While you do have to take the influenza vaccine once per year, it has never given me the impression that it is very expensive. You only need to take the mumps vaccine and chickenpox vaccine once, so I do not perceive them as a greater expense than the influenza vaccine. However, **I have received information from the city saying that it is still best to get tested for cervical cancer annually** because the cervical cancer vaccine does not completely prevent cervical cancer. **When I think of it in those terms, I feel that it is sufficient to attend regular screenings for cervical cancer.** When I was that age, there was no vaccine, so I have to get screened for it. Even now, I make sure to get examined. I weigh the potential disadvantages of the vaccine – namely, adverse reactions – against the fact that it is still not too late if the cancer is found during a checkup, or rather, that screening is effective. The exams themselves are subsidized, and only cost about 1,000 yen.

- Regarding Mrs. Ikeda's family doctor (a female pediatrician)
  - When we visited our family pediatrician to get the influenza vaccine, she said we were no longer eligible for the cervical cancer vaccine. Her attitude seemed to be that we could take it if we felt we needed to socially. She did say, "I think you should take it." Both my daughter and I were hesitant, and neither of us was enthusiastic about the idea of her taking the vaccine.

- Conditions Mrs. Igeta would find acceptable
  - If the merits win out when I think of the merits and demerits of a vaccine, then it is easy to arrive at the conclusion that it is best to take the vaccine. If my uncertainty is stronger, then I cannot bring myself to take it. I have strong feelings of uncertainty toward the cervical cancer vaccine. I do not hear anything from the people around that they have taken it. Because I do not hear anything regarding whether or not they have taken it, I have no opportunities to talk about it. I don't see much about it on TV. If they told me about how safe the vaccine is, I might think about it. I think getting screened is sufficient and the people around me seem to think so, too.
  - (What do you think about the Government's shift in policy?) It did not receive much coverage in the news. I will think about it when it does. I might consider it again if they provide information on how many people took it, how safe it is, and the rates at which it caused side effects.

COVID-19 vaccine (which Mrs. Igeta has taken)

- (While you said everyone in your family has taken the COVID-19 vaccine, how did each of you arrive at the decision to do so?) I took it first, and everyone thought it would be best to consider it after seeing how my side effects were. I was the first one to take it and I had strong side effects with the Moderna vaccine, so the rest of my family chose the Pfizer vaccine. I was reluctant to make my children go through the pain I went through, and my children were on summer break at the time and were there to see me suffering, so that is what made them decide to go with Pfizer if they were to take it.
- (Factors that led to Mrs. Igeta's decision to take the vaccine) I work directly with people and did not want to infect anyone or be infected myself. Our office is small so if someone were to get infected, I think we would have to close the office. I did not want that to happen, so I took it early.
  - (Regarding pressure from Mrs. Igeta's employer) While I was not really pressured by my employer, I thought about the vaccine for myself. I did not want to cause trouble for the children who use our service. Because they are children with disabilities, it is already difficult for them to go to the hospital, and I think it would also be difficult for their parents because they would have to stay with them at home for a long time.
- Regarding feelings of hesitation
  - I mentioned that I might get the vaccine during a regular visit to my gynecologist and the doctor told me, "You never know what it might do to your body years down the road." I think he was half-joking, but I understood what he meant – that the vaccine is not 100% safe. He said it would be okay for me to continue taking the medicine I was on but to stop taking it if I caught COVID-19.
  - My concerns were alleviated when the doctor administering the group vaccinations told me, "If you have any questions at all, please let me know. This is what the side effects will feel like. Some people don't get them. I took this vaccine, too." I was grateful he said that. My feelings of hesitation from before were gone after I took the vaccine. I could go so far as to say I thought I should have taken the vaccine even earlier. Our parents are elderly, so they took the vaccine early. But, when I took it, there were not many other people around me who had taken it, so I had nobody to use as a reference. Since I was the first person around me who took the Moderna vaccine, I was relieved when I got to hear about someone else's experience with it for the first time. I had my first and second doses in August.

Other vaccines

- (You haven't given them the vaccines for Hepatitis B or mumps?) I have given them the chickenpox vaccine. Since they were regularly visiting a day-care center, I figured that there

would be an outbreak there and gave it to them. Sure enough, there was an outbreak, and they caught it, but because they were vaccinated, their cases were very mild. That was very good.

- (Where do you draw the line regarding which vaccines you will give your children and which ones you won't?) At the time, Hib and rotavirus vaccines did not exist yet. I was a bit uncertain about the mumps vaccine because I had caught it before, so I decided to just have them take the chickenpox vaccine. I made sure they got all the vaccines on the routine schedule.

The differences between vaccinating oneself and vaccinating one's children

- Because it is their own body, if they did not want to take it, I do not think I would have made them take it. Even if I thought it would be best for them, my children are at ages where they can clearly communicate their preferences (age 14 and 18), so I want to respect their decisions. I did not think I would make them take it even if they did not want to.
- (What about when your daughter wants to take a vaccine but you are hesitant?) I think we might talk about it and do a lot of research online together. There are times when you cannot be sure how much to trust a website. If she still says she wants to take it, then I might let her.
- (I heard that parents with newborns become very busy getting their child vaccinated) I have the impression that the vaccines which you must give your baby right after they are born are not voluntary but are routine, and that you absolutely have to get them. I feel that at the time, I did not give vaccines as much thought as I do now, and I considered it normal for people to take them. I think that was my level of awareness because I was briefed on the side effects right before the vaccination and was told that side effects only occur very rarely.

Gathering information

- When I took the COVID-19 vaccine, I looked up what side effects were, but that was about it. I also kept an eye on social networks and other sites to see how high people's fevers were and how long they were lasting.
- I did research on the cervical cancer vaccine after hearing about it from my female doctor, but I still felt like not enough people had taken it, but I did not feel like the information I wanted to know was available.

Routine and voluntary vaccinations

- **My impression is that the voluntary vaccinations protect you from severe symptoms if you get infected.** I would have felt sorry for my daughters if they caught chickenpox, so I got them vaccinated, thinking that it would be enough if it helped decrease the number of bumps even a little. **My impression of routine vaccinations is that once you get it, they will provide almost complete protection – that you won't get infected if you are vaccinated.** I have the impression that routine vaccinations provide greater benefits, and that their side effects are not as severe, like you will only have a fever. They do not cause the kinds of side effects that mean you cannot return to life as normal.
- I have the impression that everyone around me was getting the routine vaccinations.

Mrs. Igeta's impression of the term "vaccine hesitancy"

- My impression is that it describes people who resist the idea of getting vaccinated. I do not think it applies to me. It also gives me the impression of people who hate putting medicines into their bodies. I often hear the term, "anti-vaccine." "Vaccine hesitancy" gives me the same impression, like it describes people who do not want to take a vaccine. One person at my workplace was like that. They said that rather than getting vaccinated, it is better to get infected with diseases like influenza and to strengthen your immune system by overcoming

them naturally. I did not really say anything in response, and while I think letting your body take care of it makes sense, it is still hard on you if you catch something.

Mrs. Igeta's trust in healthcare

- I trust in healthcare. I have never had a doctor I disliked, and even though I have used various hospitals, I feel like they all did their best to help me get better, so I do not feel any distrust. A good doctor is one who gives proper explanations like, "There are these risks, and I will do this to help you get better."

The MROC

- In my daily life, I only encounter people I get along with and share opinions with. Because the online community had posts from people with various backgrounds and ages and with various opinions, I was able to hear what sorts of opinions other people have, and that was good.

4.2.5. Mr. Umeyama

Basic information

- Male, age 46; lives with his wife in Nagoya City, Aichi Prefecture. Full-time employee (full trailer truck driver).
- I work in the transportation industry. I am a full trailer truck driver and I transport steel materials for cars. I usually transport goods throughout three prefectures in the Tokai region, where I make three or four round trips per day. I have been a full trailer truck driver for about ten years. Before that, I was a semi-trailer truck driver for the same company I work for now for about five years. I previously worked as an overhead crane operator handling steel materials at Nippon Steel and Sumitomo Metal Industries plants. That's a vehicle that looks like the arm of a claw machine. His wife is a full-time dietician who works at a child and family services facility.
- I like to spend time outside on my days off. I enjoy mountain climbing and fishing. I do not encounter many other people, so I have continued those activities without worrying about COVID-19 very much. However, I have had fewer opportunities to dine out. My wife and I used to often dine out on weekends, but that is difficult to do now.

How Mr. Umeyama realized the degree of danger posed by COVID-19

- When the COVID-19 pandemic began about two years ago, it felt so far away, like it was someone else's problem. When the first news of COVID-19 infections broke, with infections on a cruise ship, I never expected it to become like this. It felt like a bit of commotion off in the distance. Looking back on SaaS, I never thought it would become such a big deal. I did not really feel the presence of the virus as it spread throughout Japan, **but when I heard the news of Ken Shimura's death, I finally realized, "This is becoming something bad." If COVID-19 could take the life of such a major celebrity, I realized the scope of the threat – that it will take your life.** There had been reports of COVID-19 deaths before, but the impact of a celebrity dying was huge. I started to change my behavior then. Before last summer, I had plans to go camping with my wife, but we were uncertain up until the last minute, and we ended up canceling. We stopped dining out, and opted for take-out and other options instead. That was when I was most afraid of the pandemic, even more than I am now.

Mr. Umeyama's fear of COVID-19 vaccines

- Hearing many rumors about the vaccines, I developed a different sort of fear from the virus over whether the vaccines were safe or not. Just because a vaccine had been developed did not put my mind at ease. I heard that mRNA was a new technology, and that it was used to develop the new vaccine in just one year. Someone online or on TV said that even if people are okay immediately after taking it, because it was developed in such a rush, they wondered if it would have some other effects two or three years later. I did not know what was true. It carried the fear of the unknown, as it did not feel like one of the more common vaccines we take, like the influenza vaccine. It carries the fear of the unknown because even though we say it is new technology, it is not something like a computer. Instead, we are talking about something that gets put into the body. It is okay if people only have the types of side effects that are talked about on the news. Shortly after taking the vaccine, (Yusuke) Kinoshita, a professional baseball player for the Chunichi Dragons, died young during practice. Whether the vaccine caused his death is unknown, but since someone so young died so suddenly, I thought that it might have been related to the vaccine.

Conversations Mr. Umeyama has had about COVID-19 vaccines with others

- An old friend and I talked about whether or not we would take COVID-19 vaccine. They were of the same opinion as me, and said that they do not want to take something when we do not know what it is. They also had a history of asthma and said they did not want those symptoms aggravated by the vaccine. Another friend told me, “A doctor I know said that it is best not to take something like that.” So, their opinion was that if a doctor said they were not going to take it, they also would not take it. I was uncertain about the vaccine when we talked, and I was just listening to my friends’ opinions as a reference. In the end, I just heard what they had to say, but I did not base my opinion on theirs. My parents are elderly and I wanted to be able to see them without worrying, so I made the decision on my own after taking a comprehensive view of the situation.
- Part of me wanted to hear various opinions on the matter. While I said I was not going to base my opinion on what I heard, I did intend to use them as references to a certain extent. I meant that I had no intention of just doing what my friends said was the right choice. Because their circumstances are completely different from mine, I wanted to hear what their opinion was in terms of their own circumstances.
- I think my wife took the vaccine in early summer, sometime around June or July. Her job often involves working with children, and she is also an employee of the prefectural government, so she was eligible for a priority slot. That was right around the same time I was most uncertain myself, so we talked about how the vaccine was a little scary. I think my wife felt stronger pressure to vaccinate at her workplace than I did at mine. We thought that health professionals and people working in welfare facilities probably had no choice but to vaccinate. My wife also said that she did not want to take it. While we did not discuss the possibility of having some bad effects years from now, she did say that the side effects after her first dose were so bad she did not want to take a second one. I did not get the impression that she was thinking about the vaccine more deeply than I was. I did not stop her from getting vaccinated, nor do I think I could have stopped her because of her professional responsibilities.
- After taking the COVID-19 vaccine, I stopped talking about it with friends. I have also not heard of anyone catching it. Once you stop being uncertain as to what to do, you stop talking about it as much. By the way, I spoke to a friend who has not vaccinated two or three days ago on the phone. They said they had taken a vacation day to visit Universal Studios Japan. I could not help but think, “What do you think you’re doing?” It is not that they are not afraid of the virus, either. They wore a mask and protective glasses. If they had to go so far as to do that, I think it is better not to go in the first place. That was the friend who has asthma, and I did say, “If you have a pre-existing condition, you shouldn’t do anything careless.”

Pressure at Mr. Umeyama’s workplace

- Naturally, I also asked for opinions from people who thought it was best to take the COVID-19 vaccine. When I said that I did not intend to take it myself, one person said, “I can’t believe you. It is so selfish for you not to take it.” That was one of my co-workers. One of my co-workers who I was relatively close with also said something like that. At the time, I wondered if that was how people normally felt. That was how the atmosphere around me was, so that was one thing that made me feel pressured.
- There were many times I felt pressure at work. When the company talked about the vaccine, it did so with the premise that the choice to vaccinate is up to the individual, but after I did not get vaccinated through our workplace vaccination program, a manager asked me when I was going to get vaccinated several times. When I told them, “I do not have plans to get it at the moment,” I was told, “When you do decide (when you are getting it), let us know,” spoken with the assumption that I would be getting it at some point.
- I was not required to submit proof of vaccination, but I was told to report whether we had taken the vaccine or not. While they did not introduce any restrictions on work for people who did not take it, there was definitely the assumption in the air that everyone would

definitely be taking it, even though that was not said directly. I think that almost everyone must have taken the vaccine. I think saying outright that you will not take it takes a lot of courage. Given the prevailing mood at my workplace, I strongly felt that it would be quite difficult to do my job if I did not take the vaccine.

- Partly out of resignation and partly because I wanted to reassure the people close to me, I decided to take the vaccine in the end. When I took it, I continued to feel the fear of the unknown toward the vaccine.

On whether Mr. Umeyama consulted his family doctor

- Although my vaccination was provided by my family doctor, I did not consult them at all before receiving it. If the subject is conventional vaccines or viruses, I can say I trust my doctor as a specialist, but I was skeptical about how much they knew about COVID-19 vaccines. This meant I did not feel like I wanted to ask them about it very much. I hate to put it like this, but I have the impression that doctors might not know very much about vaccines that just became available.

Gathering information

- I think there are some things that we will understand in the future, but I am given the impression that they are conducting a long-term clinical trial on an ongoing basis. I think that now that everyone has started actually taking the vaccine, in the future, we will be able to look back and say what was good and what was bad.
- I feel like there was no method of eliminating my anxiety, and none of the information was helpful in the end. One person says that taking the vaccine presents the greater risk, while another says the opposite. I cannot decide on my own what is correct. So, I arrived at the decision that I would rather choose the option that would reassure the people close to me than to keep talking about vaccines. In that context, I took the vaccine in an irresponsible manner.
- My mother-in-law kept asking me when I was going to take it. I never told her about the fear of unknown side effects that I had been thinking about. I responded to her by saying things like, “I haven’t been able to make an appointment yet.” It was hard to tell her what I thought. If I told them, they would probably say, “Who does this guy think he is?”

Mr. Umeyama’s impressions after getting vaccinated

- In the end, I got my first dose in September and second in October. The only side effect I experienced was difficulty raising my arm. Afterward, I felt like, “That was it? How unexpected.” I felt more at ease than before I took it. While the fear of unknown side effects still lurks in the corner of my mind, and I don’t want them, I was able to get over my fear once I had the shot. It has become easier on me in the sense that I cannot take back what I have already done.
- If I do actually have an adverse health effect, I will probably bear it silently. After all, it will be difficult to determine that the COVID-19 vaccine was the cause of those effects, and if there is a class action lawsuit or something like that years down the road, I might consider joining it. In the end I am the one who made the decision to go and take it. It is not as if someone grabbed my arm and forced me to take it, so I do not really feel the need to blame the Government or anything like that.

Mr. Umeyama’s thoughts on taking the third dose of the COVID-19 vaccine

- At the moment, I do not feel the need to take a third dose of the COVID-19 vaccine. I think that it is not something that you should take again and again. I get the feeling that the more doses you take, the more you are building up to something bad happening. While I did say that I felt more at ease after the first and second doses, that does not mean that I started to

view the vaccine in a positive light. When I started hearing about the third dose, I thought, "Why do we have to take a third dose when up until now they were saying that it would be enough to take it twice?"

- I do have the slight feeling that it will be okay because everyone has taken the vaccine. When I think about it too seriously, I start to imagine a fantasy world where, in the future, every person who took it goes crazy. That sort of thing is only for the movies, but I do imagine it from time to time. But in the end, it might be a big deal that I feel that everything will be okay because everyone has taken it. By "everyone," I mean those close to me. I think I can have a slightly more positive outlook if everyone close to me has taken the vaccine.

Mr. Umeyama feels no hesitancy toward the influenza vaccine

- I usually take the influenza vaccine. I take it every year and have never once felt scared to do so. I have caught influenza twice in my life, and while I did not develop severe symptoms, it was awful. The last time I caught influenza was five years ago. I caught it once three years before that. I caught it even though I had been vaccinated. I have been told that if you take the vaccine, you will get over the infection without experiencing heavy symptoms. When I think that I may have suffered even more had I not been vaccinated, I think that it is best to take the vaccine.

Expectations that the COVID-19 vaccines will be effective

- When I get the influenza vaccine, I let my guard down afterwards, but for the COVID-19 vaccine, I have been acting carefully. I do not have high expectations toward the COVID-19 vaccine's effectiveness. Although I have seen reports on TV and in other sources that vaccinating reduces the risk of getting infected or developing severe symptoms, I am still taking care not to catch it. While some of the people around me are viewing the Omicron strain lightly, like it is just a common cold, I will not let my guard down. However, I do think it is best not to fuss over the number of daily infections that are being reported. I have heard that the current strain is weaker than the ones that were going around in the past, so I feel that it is not so serious that we need to panic over it and stop the economy.

Grasping one's own vaccination history

- I have the marks leftover from the BCG vaccine, so I think I had that one. I also think I have taken the mumps vaccine and chickenpox vaccine. I do not know about any others. As to whether any vaccines I have taken in the past frightened me like the COVID-19 vaccine does, I must say I have never thought about it up until now. Maybe that's just how it is.

Awareness toward adult vaccines

- I do not know of or have researched any vaccine I am eligible to take now or will be eligible to take in the future. So, I currently do not even know which diseases are currently considered treatable by vaccines.

4.2.6. Mrs. Komai

Regarding influenza, Mrs. Komai says, "You can treat it if you catch it"

- When Mrs. Komai's son was in second grade, he experienced severe side effects to the influenza vaccine. He developed a fever in the 39 degree range and he had significant swelling of the arm. They were afraid and had him tested for allergies to discover he was highly allergic to egg whites. However, because he had previously been able to eat eggs like normal, Mrs. Komai was told that the side effects were just a coincidence, and the doctor did not instruct Mrs. Komai to avoid giving her son the influenza vaccine in the future.
- Afterwards, her son took the influenza vaccine two or three more times before reaching adulthood. He did not experience major side effects and only had a slight fever, but he also wanted to avoid the vaccine. During her son's high school examinations in ninth grade, he did not want to take the vaccine and therefore did not receive it. **Regardless of whether Mrs. Komai's son took the influenza vaccine or not, he caught influenza every year. Every year when he caught it, he was immediately taken to an otolaryngologist and was given medicine. Since he always recovered in one day, Mrs. Komai began to think that "It is sufficient to treat the disease if he catches it."**

Discussions Mrs. Komai had with her son regarding vaccine hesitancy

- Among the vaccines on the routine vaccination schedule, the only vaccine that Mrs. Komai's son has not received is the Japanese encephalitis vaccine. Group vaccinations were suspended around the time Mrs. Komai had an appointment to get it, and while they were waiting to see how the situation developed, time passed and Mrs. Komai's son will soon turn twenty years old. Mrs. Komai's son is now a university student, and she said, "I think he will consider studying abroad once COVID-19 settles, so as his mother, I want him to get vaccinated." She thinks he will be fine because the people around them have taken it.
- However, **Mrs. Komai's son refuses to take the COVID-19 vaccine, saying "I do not want it." The main reasons for this are that he does not feel it is necessary and because he does not like injections. While he is comfortable visiting doctors, he hates injections. When Mrs. Komai tells him, "You should get vaccinated for Japanese encephalitis when you go abroad," her son says, "I can't go anyway because of the COVID-19 pandemic."** Mrs. Komai's stance is, "I want him to take the vaccine while he can still get it for free. Even if he does not study abroad, I think he will still end up going abroad for some other occasion, like his honeymoon."

The age at which people can decide whether to vaccinate for themselves

- Mrs. Komai's son is a rugby player and is almost twenty years old, so it would be impossible for her to physically take him to get vaccinated. She said, "If I cannot convince him with my words, I might have to give up." She plans to continue showing him the information on the vaccine to try to convince him until the day his vouchers expire.
- Mrs. Komai feels that "The age at which children decide whether to take a vaccine on their own is probably around ninth grade." Regarding discussions she had with her son while he was approaching his high school entrance exams, she said "He was thinking about various things more than I had anticipated." She discovered that they were now able to discuss various topics, and that her son had become able to express his own thoughts and exchange opinions with her. She thinks that before that, until around the second year of middle school, it is okay for parents to vaccinate their children without having to convince them.

Taking the wait-and-see approach until everyone else is vaccinated

- According to Mrs. Komai, ever since her son was small and had severe side effects to the influenza vaccine, he began to worry about even the smallest things based on his memories of

that time. As a result of that, Mrs. Komai started to think more carefully about vaccinations herself.

- Regarding the COVID-19 vaccine, Mrs. Komai said, “Everyone in my family took it in early November, after waiting for everyone else around us to take it.” (Her son had access to group vaccinations at his university in July, and almost everyone in his rugby club took it, but he declined.)
- She said, “We saw how the people with bad allergies around us fared after the vaccine, and thought it seemed safe to take. When it appeared everything was together, we took it before the wave in winter,” so **it seems that instead of looking at side effects among the entire vaccinated population, Mrs. Komai’s family preferred to focus on specific examples of side effects among the people close to them, particularly those with allergies or other conditions affecting their physical constitution.**

Information Mrs. Komai trusts

- As previously discussed, rather than general information or statistics, **Mrs. Komai thinks “Information from people in the neighborhood whose physical conditions or preexisting conditions you are familiar with is important. I trust that sort of information more than information from the Government.”**
- Regarding information presented in the media, Mrs. Komai said, “Statements from the Government have no consistency. The Prime Minister, the Governor of Tokyo, and Dr. (Shigeru) Omi are all saying different things. **I want the Government to be consistent in their messaging**.” Mrs. Komai feels that when Shinzo Abe was Prime Minister, the messaging was consistent and easy to understand, but that changed alongside the change in administration.
- She also added, “I am a housewife and I keep all sorts of media on in the background. But, children and busy people do not watch TV, so whatever they happen to see may become all the information they obtain.” She said she feels this may be affecting her son or his friends. “**Whenever they hear some positive information in the news, they just look at the headline and say, ‘So that’s how it is.’** That is the end of their engagement with the topic.”

Being sensitive toward the disadvantages of not taking the vaccine

- Mrs. Komai’s father, who lives far away, lives in a long-term care home and has an intractable disease. She wanted to go visit him, but **unvaccinated people were not allowed entry at the long-term care home during the state of emergency.** This made Mrs. Komai think, “I do not have allergies, so I should take the COVID-19 vaccine as soon as possible.”
- Although he thought that if he caught COVID-19, he would only have light symptoms, but **Mrs. Komai’s son thought he would have to miss a rugby match if he caught COVID-19, or that he might be refused entry to restaurants and concert venues if he was not vaccinated. So, he started to think he should take the vaccine. He said, “I started to see the downsides (of not vaccinating).”**

Pressure to take the COVID-19 vaccine Mrs. Komai felt from the people around her

- According to Mrs. Komai, **“The other moms have been asking, ‘Did you get the vaccine?’ whenever we talk to each other.” When I said, “I haven’t taken it yet,” and was asked “Why?” and I felt awkward until I took it.** There are many different kinds of people and different ways they perceive vaccines. Saying that you cannot tell what people think about vaccines by looking at them, Mrs. Komai’s personal thoughts are, “Don’t ask me (if I have taken the vaccine). The interactions among moms in my neighborhood are very immature.”
- Among the people around Mrs. Komai, **many seem to think that it is unpatriotic to avoid taking the COVID-19 vaccine**. **The mothers in her social circle have made comments like, “I can’t believe there are people who haven’t taken it!” It has become something that is viewed as a common courtesy.** In response to these attitudes, Mrs. Komai said, “I’m not so

certain if that's true." She is concerned that behaviors and attitudes like, "I took the vaccine, so I can go anywhere" will actually make it more likely for the disease to spread. "In the first place, it's supposed to be up to the individual whether they want to take it or not."

- On the other hand, **around the time COVID-19 vaccinations were about to begin, Mrs. Komai received a call from her own younger sister who said, "Don't get the COVID-19 vaccine no matter what." It seems she had been convinced not to get the vaccine by an accusatory video from a vice-president of Pfizer.** Her sister had also called on her mother-in-law to stop her from getting vaccinated. Mrs. Komai said "Okay, okay," on the phone and left it at that. They have not spoken since then. While she knows her sister is concerned about her, **Mrs. Komai does not want to tell her sister that she took the vaccine and be told, "You betrayed me."**

4.2.7. Mrs. Horie

Basic information

- Female, age 48; lives in Koto City, Tokyo with her husband and three children. She is a full-time homemaker.
- Mrs. Horie lives with her husband (age 53; public servant); her son (age 16; grade 10); and her two daughters (ages 9 and 10; grades 3 and 4).
- Mrs. Horie has two older brothers who live with her parents in Adachi City. Her husband's parents also happen to live in Adachi City. Her mother-in-law lives alone. She only visits her parents' home in Adachi City once per month during long breaks from school, when her children request to visit. Her in-laws have had cancer in the past, so she was concerned about getting infected with or passing on COVID-19 during the early days of the pandemic. Everyone got used to the pandemic and took the COVID-19 vaccine, so they are less concerned recently. The only two relatives of Mrs. Horie who have not yet been vaccinated for COVID-19 are her two daughters, who are not old enough to take the vaccine yet.

Mrs. Horie's original perception of vaccines

- **We used to automatically take vaccines for which the city sends vouchers.** In particular, for vaccines given to children that have been around for a long time, **I used to give them to my children without really questioning them.** That's what we did for the vaccines on the routine schedule.
- Regarding the vaccines I have taken myself, I am not very aware of the vaccines I was given as a child. As an adult, I have been aware of the influenza vaccine and the rubella vaccine. Before we conceived our first child, my OB-GYN told me that I had no antibodies for rubella. I was told that I could take the rubella vaccine for free around my next pregnancy and I thought, "My antibodies are low, so maybe I'll take it." Other than that, I have only really been aware of the COVID-19 vaccine.
- I learned that contracting rubella during pregnancy can affect the fetus from books and materials from a public health center. Since my OB-GYN also performed blood tests, I also heard about it there, so I began to think I should get vaccinated. Adachi City's newsletter mentioned that the vaccine would be provided for free to pregnant women and members of their families who wished to take it. Because rubella can affect the fetus, I thought it would be best to get vaccinated, and did. Regarding the effects of vaccines themselves, I never thought they were very scary until I heard about the new COVID-19 vaccines, or the cervical cancer vaccine. I thought they were something that we would be better off taking, so I had no doubts toward the routine vaccinations my children were given. There are so many vaccines given to babies and managing their schedules was difficult. I had not given it much thought until then. That was also in part because my friends did not question the vaccines, either.

Changes in Mrs. Horie's perception of vaccines

- My perception of vaccines is changing. **The more information I look up about them, the scarier they become.** This is particularly the case when I see stories about how COVID-19 vaccines work in a different way than vaccines did in the past, because **we do not know what effects they will have in the future.** Adults are of an age where they can mentally prepare themselves for that, but **children have long lives ahead of them, which makes that frightening.**
- There are some areas that differ in how I perceive vaccines for myself and vaccines for my children. I am concerned when I hear the eligible ages for the COVID-19 vaccine will be expanded and my daughters will become eligible for it, when they were previously ineligible. If trends continue as they are, I will probably not vaccinate them and wait and see. But, they

might not understand that decision when all the other children around them are taking it. I may be swayed if I do not stand firm in my beliefs when I explain my decision to them. Their bodies are still growing, so I have the impression that the vaccine might have major effects on them. There are unknown effects and there is also the chance of major short-term effects, like temporary fevers. It is scary if there are some complications, too. The other day, I read a story in the newspaper or somewhere that the vaccine could have side effects on your heart or cardiovascular system.

  - One of my daughters has Kawasaki disease. Kawasaki disease can cause issues like blocked arteries, and prognosis is poor if the heart is affected. We have been told that so many times, and what we heard last was that because she has been under observation for five years without having any problems, she probably no longer faces any risks due to Kawasaki disease. However, the cause of Kawasaki disease is also unknown, so I was unsure how a vaccine that is said to have side effects on the arteries or heart could affect a child whose constitution may already make them predisposed toward developing such conditions. I was also unsure if, conversely, it would be better for my child to take the vaccine because Kawasaki disease meant they were predisposed to heart or artery problems. I tried to research this, but could not find anything out. There may be no clear answer and nothing I can do about it, but when I start to think about it, I become worried.

- My eldest son was more or less old enough to decide on his own. Another aspect was that he took the vaccine before I was as uncertain about it as I am now. While I was afraid of side effects, I was not as worried for the future as I am now. I strongly felt that it was best to give him the vaccine. Right around the time when the Pfizer vaccine was running out, there was lots of talk about the heavy side effects of the Moderna vaccine, so we decided to go get him vaccinated while the Pfizer vaccine was still available. He managed to reserve a slot after there was a cancellation.

Mrs. Horie's own COVID-19 vaccination

- When I got vaccinated for COVID-19, I was more concerned about the growing number of restrictions I would face if I did not take it than I was toward the risk of it having future health effects. The Pfizer vaccine was also available at the time, so I took it. As for its future effects, I heard that unlike conventional vaccines, the COVID-19 vaccine works on your genes. While I have not thought about it so much I can explain it to others, when I heard that it alters your genes, I was given the impression that it works by changing something fundamental about the human body. Because genes are something passed down from generation to generation, I am uncertain about what will happen if we alter them.
- As for how I came upon that information, while I was talking with a friend, they said "It's scary because it's not the same as the vaccines we've had in the past." Afterward, I looked up how it differs from conventional vaccines. Because I had the impression that none of the information being provided about the vaccine on TV would touch upon that, I ended up searching the internet. The page I read was not written by a layperson. It was a medical website that had information about vaccines. Since personal opinions are questionable, I looked up and read sites that I thought were trustworthy.

Consulting a physician

- Just as I talked about earlier when I described my daughter with Kawasaki disease, I did not know if the disease was caused by her constitution or if it appeared more easily in people with a certain type of constitution. I could not make a sweeping judgment.
- We do have a family doctor who is a pediatrician, but I think opinions differ among doctors, so you do not know what is right until you ask several of them. Because our family pediatrician has small children who are close to mine in age, I think I can talk to them and hear information like, "Here is what we are doing." I have not consulted them yet. I think I will ask

them right away if we see them after my children become eligible for the vaccine, but I still have lingering feelings of uncertainty.

- I do not think I would go see our doctor just for a consultation on the vaccination. While the doctor asks, "Is there anything else?" when they have the time, they try to cut the conversation short when the office is busy. This means there is not enough time to ask, or even a good time to ask. If there were opportunities to talk to them in detail about it, like during a consultation session, I think I would ask at that time. I am able to visit the pediatrician regularly, so when vaccinations begin, I would like to try asking them then.
- When my children were smaller, I once asked the doctor if I should give them the influenza vaccine. They gave a short answer, saying, "Giving it to them will strengthen their immune systems, so it's best to do so." At the time, I wondered if that was true, but I had them take it anyway. But even when I did, they would still catch influenza, and there were times the side effects from the vaccine were more severe than the disease itself. One of my children once developed a fever of nearly 40 degrees Celsius. So, I began to think that they no longer needed the vaccine. While the vaccine is said to prevent severe symptoms, like hydrocephalus, once I started thinking I did not have to give it to them, my entire family gradually stopped taking it.
    - The people around us have various opinions, like "We don't take the vaccine, but we did not catch influenza either." But I often heard about people who catch it even after getting vaccinated. I began to think it was ineffective and stopped taking it. It might be because my children have grown up a bit, but they stopped catching influenza even if they do not get vaccinated. I do not know if they avoid it by chance or because their immune systems have become stronger. There is no way to say for certain.

Getting later doses of the Japanese encephalitis vaccine

- The first round of a Japanese encephalitis vaccination is given in three doses, with two additional doses a few years later. While my children have one left, because we already started giving it to them, I am thinking of getting them the last dose. However, the Japanese encephalitis vaccine was recategorized as a voluntary vaccination due to strong side effects. Once I start thinking of things like that, there is no end to it. Since my children have not had any side effects yet, and since they have taken the previous doses, I am thinking of giving them the last one.
- However, this is not a vaccination that should be considered necessary in daily life today. I wonder why Adachi City sent us a notice recommending we get it, but we had already given it to our children long before I ever questioned it. When I say "necessary in daily life today," I am talking about needing to take the vaccines because you live in a region where you might catch Japanese encephalitis. I think it is endemic in certain regions of Japan, but I also saw something on how people in this part of the country do not need it. Since I do not consider it as something I need to take to live where we do right now, there was no reason for us to go out of our way to get it, and I also wondered if it is necessary for the city to send us notices about it as a routine vaccination. At first, I did not think that much about it. I was under the impression that what they send us regarding routine vaccinations are for the vaccines that children need to have to live their everyday lives. Only recently did I start to question the need for that vaccine and look into it.
- When I say something that is necessary in their everyday lives, I mean things that are related to them starting school. When filling out the paperwork to enroll my eldest son in school, if he had not taken a vaccine, I had to write the reason why he had not taken it. It made me think that if I had to write something like that, it was a sign that there would be trouble if he went unvaccinated. So there is that, too. In addition to that, I mean diseases that people catch in this region. For example, there might be areas where the soil has lots of bacteria that cause tetanus. So, it would be dangerous for the people living there to go unvaccinated for tetanus.

- If a vaccine becomes voluntary, I did not think of it as something that I need to spend money on to give my child. My family is large, so I feel like we will take the ones that are provided for free and if I thought they were necessary. I never looked up how much it costs to take the Japanese encephalitis vaccine. My feeling is that if it was not that necessary to begin with, then it would be okay not to give it to them. But I do not know where my children will go in the future or where they will live, so if they are going to live in a region where that disease poses a threat, then it is best for them to get the vaccine. On the other hand, there are some who say that if someone takes a vaccine while they are little, their immune systems become weaker. Like my experience with the rubella vaccine, if you get vaccinated for something as a child and then barely have any antibodies left over when you are an adult, then I think it is best to get the vaccine when you need it. But there is no way for me to know if they will move or not. I have also heard that you have to take a number of vaccines before going overseas, or that you cannot leave Japan without taking them. While there are no chances of that happening to my family, I think it is still best to get the vaccines to serve as a foundation.
- Regarding my concerns about side effects when the Japanese encephalitis vaccine returned to the routine vaccination schedule, I got the impression that improvements had been made to the vaccine. Because the previous type caused strong side effects, it was made voluntary when that was the only type available. Public officials or the city did not go so far as to recommend it, and they left the decision up to us. Then, I started receiving notices that it was safe to take it again. While talking about it with friends, it came up in casual conversation like, “It must be safe to take again,” and we started taking it. I previously thought that vaccines on the routine schedule were somewhat guaranteed to be safe, but now I am uncertain.

Feelings of uncertainty toward routine vaccinations

- Looking back, I can see that the COVID-19 vaccine is a major reason I started thinking there were things that concerned me about routine vaccinations. Another one was the cervical cancer vaccine (I am not sure if it is on the routine schedule). I do not really intend to take that vaccine, so I have not looked into it. Hearing stories about the cervical cancer vaccine and the recent COVID-19 vaccine made me very uncertain. I am anxious, but there are still many aspects on which my feelings are unclear. So, being part of the MROC gave me exposure to the opinions and experiences of various people and has encouraged me to do further research.

Vaccination status for the people around Mrs. Horie

- I do not hear many people say that they have taken the cervical cancer vaccine. Everyone says they are scared of it. I think it’s scary, too. I think of it as a vaccine that is so scary the people around me do not want to take it at all. When I say “the people around me,” I mean my eldest son’s friends. They have a child older than hours and their youngest is the same as our oldest. I heard from them that they think it is scary and that they do not intend to take it. That includes mothers who live in our building. Recently, there is no one around me I can talk to in person about taking it or not. Because I cannot hear about people’s direct experiences with it, I do not have any information about it. **By hearing from a number of people around you, you can get statistics that are close to you and it is easier to obtain peace of mind. While that is too few people to be called “statistics,” I want to hear the voices of real people.** I have no opportunities to do so. The real voices of people close to me are the most reassuring. Part of me is unsure of how much I can trust the statistics that are presented. **While vaccination notices always include statistics, side effects could happen to anyone and there is no guarantee they will not happen to me.** To take a vaccine while being told you might experience side effects is unsettling even if they are only going to affect one in several million.

- One of the moms I am friends with actually had cervical cancer. Even though she lives close by, I have not seen her at all. She had it surgically removed, and she recently had another child. While it is better to never get cervical cancer, I was given the impression that it can be cured effectively if it is detected early. After having experienced cervical cancer firsthand, I am very curious as to what she thought about the vaccine and if she gave the vaccine to her own daughter, who is now in eleventh grade. I just do not have opportunities to talk to her.
- In the MROC, some people left comments saying that if even the people around them were taking the vaccine, they would not take it unless they felt convinced. Because I haven't taken it myself and I have not heard anyone talking about how they perceive its effects on safety, with the sources of information I have now, it is hard to say what would convince me. For example, if I started hearing "I didn't have any side effects" from people close to me. I think it is difficult to grasp effects like not developing cervical cancer, but it is difficult to give the vaccine to children if there is no sense of safety that it can be taken without adverse reactions. While I can teach my children about things I have experienced personally, I do not have such experiences. **There is also the fear of letting your child take something you have not taken yourself. It is frightening for your child to suddenly turn into a test subject.** Most of the voluntary vaccines I have given my children up until now are the ones I have also taken myself. While there is a sense of safety because I did not experience side effects for this vaccine or that, I cannot say the same for the cervical cancer vaccine. On top of that, I have heard it causes strong adverse reactions, so I do not know where I will get the conviction to give it to my children.

About the cervical cancer vaccine

- I have not taken the cervical cancer vaccine. While I am screened for cervical cancer almost every year, I do have the option of refusing to be a test subject for the vaccine. It is also possible for me to experience it myself. I am not going to have any more children and I have a cancer screening every year, so I think we will know about it if something is wrong. I have not considered the idea of trying to prevent it with a vaccine. I also do not remember talking to my parents about taking the cervical cancer vaccine. I wonder how long it has been available. I did not even know it existed.
- There is still time before my children are the eligible age for the vaccination, so I have not discussed it with their doctor or anyone else. I am not ready to give it to them, so why ask? On the other hand, I would be very uncertain if they strongly recommended it. I think I will ask them if my feelings lean toward vaccinating, but I have no intention of giving it to them at the moment, so if I were to ask, it would only be to get a point of reference. If I do that, I would have to ask the doctor when they have some free time. I do not think I will have the opportunity to talk to them at length. I feel like I am too concerned and my motivation to get them vaccinated is too low. When I feel a little more motivated to vaccinate, I will seek a consultation with the doctor, and that includes having them give me a push to vaccinate. I think the opinions of doctors will vary depending on their age, sex, and whether or not they have children. If a doctor tells me, "I won't give it to my kids," then I think I will not do so, either. I think it would be nice to have chances to ask doctors in various situations for their opinions. I won't be able to make a decision based on the opinion of one doctor. I think the data that I will base the decision on is the same, but there are many things that trouble me, like which type of doctor will have the most accurate opinion.
- Once the safety of the vaccine is a bit more established and it is recognized as effective, I think I will be able to be a little more positive about it. Since it seems like a relatively new vaccine, I do not know about its effectiveness. Isn't it about time for there to be statistics on it? Given the current circumstances, I think the degree to which people feel strongly about taking it is low. On top of that, part of me might be stalling in a sense, because there is still some time before my children grow up.

4.2.8. Mrs. Takada

Basic information

- Female, age 60; lives with her husband (age 66). She is a full-time homemaker. Her husband is retired, but he worked in sales for a construction company. Their son (age 34) is married and lives separately with his wife and two children (ages 14 and 9).

Mrs. Takada's basic position on vaccines

- "Until I got married, I was a nurse. I worked at a hospital's pediatric ward. I was not particularly set on joining the department of pediatrics, but I like children, so I was happy."
- "At the time, I viewed vaccines in a positive light. However, that was not because I saw them in a positive light after the overall risk/benefit ratio. There was little negative information on adverse reactions at the time, and I only ever thought of vaccines as a topic that was already settled."
- "When my son was very small, I heard stories about meningitis after he received the MMR vaccine and grew worried. I do not think the information we received about the vaccine had any information on side effects at the time."

Mrs. Takada's hesitancy toward the influenza vaccine

- Mrs. Takada's son is allergic to eggs, house dust, and buckwheat. This is why they have never given him the influenza vaccine. (When her son was around age 20, his egg allergy test values were low enough that he could eat them, but he does not eat them now.) Mr. Takada has also recently developed an egg allergy, so he will not be taking the influenza vaccine.
- To begin with, Mrs. Takada says, "The strain of influenza changes year to year, with some years being Type A and some Type B. Because the vaccine is produced using the strain from the previous year, there is no point in taking it. I have never taken it, either."
- She says the reason that she does not take the influenza vaccine is unrelated to the fact that it requires an out-of-pocket payment, but because it is pointless to take. "In my 20s and 30s, **I was so busy taking care of my son that I never even recalled there was an influenza vaccine.** When I was in my 30s, I had the opportunity to think about taking it and decided not to take the influenza vaccine. Around that time, I started to reflect on my own body. I learned from TV that the strain of influenza changes every year and that there is no point (in taking the vaccine)."

Comparing vaccine risks and effects

- In this manner, Mrs. Takada is not hesitant toward vaccines in general, but has decided to take the ones she deems significant and does not take the ones she considers to be pointless.

The pneumococcal vaccine

- For example, regarding the pneumococcal vaccine, she says, "My husband received the pneumococcal vaccine for free, and I plan to take it when I reach age 65, too. The older you get, the higher your risk for pneumonia, and I have not heard about any major side effects from the pneumococcal vaccine. On top of that, there are disadvantages to everything, and I am the type of person who focuses on the benefits."
- When asked about the pneumococcal vaccination, she said, "My husband did not want to get it at first. He is the type to focus on the disadvantages of everything. But I gave him some advice that convinced him, so he took it. I do not think my husband was able to compare the advantages and disadvantages of pneumonia. He had no knowledge. He thought he wouldn't catch it."

The COVID-19 vaccine

- Mrs. Takada says, "I took the COVID-19 vaccine right away because the disease carries a high risk of severe symptoms." When her vaccination vouchers arrived, "I called my husband's family doctor and waited on the line forever to make an appointment." The doctor's office was flooded with calls from people trying to make appointments, and Mrs. Takada had to spend ten minutes waiting for the call to go through. At the same time, her son has asthma, and his regular allergy specialist said, "It is best not to take too many vaccines," so he has not taken the COVID-19 vaccine.
- Regarding the decision whether to take the COVID-19 vaccine, Mrs. Takada's family talked and decided together, saying "We'll take it to prevent severe symptoms." While they were aware of the chances of serious side effects, they took it thinking, "Maybe we'll be okay."
- Mrs. Takada also mentioned that she did not discuss or exchange any information about the vaccine whatsoever with friends or acquaintances. (It seems that Mrs. Takada generally has almost no interaction with her friends, whether the topic is vaccines or not.)

The HPV vaccine

- "If my grandchildren had been girls, I think I would have wanted them to take it. If it can lower their chances of getting cancer, then it is best to take it."

The degree of Mrs. Takada's health consciousness

- When asked about her health consciousness, Mrs. Takada said, "I am a very health-conscious person." She owns a smart watch, an oximeter, and a blood pressure monitor. She has a strong desire to manage her own health. She says she is the one who researches and purchases such health products, and her husband does not do any research on them on his own. However, she said, "The main one who uses them is my husband, because he is the worrisome type." Describing her own personality, she says, "I am the type who wants to keep trying new things."

Experiences with and trust in healthcare

- "My son is scared of injections and hates hospitals. He follows prescription instructions perfectly and has quit smoking. He is trying his best to maintain his current condition so that he does not get sick."
- When Mrs. Takada is unsure of something related to healthcare, she consults her family doctor or nurse. As for the reason why, she says "My parents are from a different generation (so their opinions are not helpful," and "I lost contact with my girlfriends after getting married." In addition, she says, "When my son was small, my husband was too busy to consult, so I had to make decisions on my own." Regarding her husband, she said, "It was easier (to make decisions on my own) than to have him tell me what to do."
- Her husband and son have allergies, so they have had a family doctor for many years. When carefully selecting a family doctor for one's children, Mrs. Takada says the main points to look out for are that they are thorough, kind, give a reassuring impression, and like children. For her husband's family doctor, they preferred someone who gave good diagnoses, did not waste time chatting, spoke in clear terms, and was logical.

Sources of information

- Mrs. Takada does not have much interaction with her friends, so her main sources of information for health-related topics are TV and the internet. She also says she reads women's magazines from time to time. As for sources of information that Mrs. Takada considers trustworthy, she mentioned information from the municipality and from the internet (especially hospital and pharmaceutical company websites). She also says that special reports on TV are trustworthy. In particular, she says "I would trust any explanation from a doctor or

specialist, like someone who is highly educated, like Professor Osamu Hayashi."

- Regarding vaccines, she says she would like more easy-to-understand information or in-depth content on vaccines. "If they did that, I think more people would take vaccines," she commented.

Are vaccines for children?

- **"I was not aware that there are vaccines you take as an adult,"** Mrs. Takada said. "They were talking about the pneumococcal vaccine a lot on TV, so I heard about that from TV."

Routine and voluntary vaccinations

- For voluntary vaccinations, as well, Mrs. Takada thinks, "Considering the disadvantages (of getting sick), people should take the voluntary vaccines, too. For example, boys should take the mumps vaccine. But there are doubts about its safety, and the Government does not provide compensation for it. In the first place, I think **all vaccinations should be on the routine schedule and the Government should provide compensation for them**. I think the Government is running away."

4.2.9. Mrs. Watase

Basic information

- Female, age 74. Mrs. Watase is involved in various volunteer activities every day.
- Mr. Watase is currently 79 years old. He worked until age 62 but is now certified as requiring level 1 long-term care due to diabetes and a back injury. Their eldest daughter (age 41) also lives with them. Their eldest daughter is unmarried and is currently unemployed. She sometimes participates in volunteer activities alongside Mrs. Watase. Mr. and Mrs. Watase also have twin sons (age 49) who have their own independent households.

Mrs. Watase's volunteer activities and the COVID-19 vaccine

- Mrs. Watase volunteers at a group home for people with disabilities. Starting in June 2020, the Tokyo Metropolitan Government asked the facility to take various steps to prevent the spread of COVID-19. For example, they have conducted saliva tests for COVID-19 every Thursday. As such, Mrs. Watase has developed a strong awareness toward COVID-19 over the course of her regular activities.
- According to Mrs. Watase, "The office (at the group home) told us it was our choice to take the vaccine, but I knew that the guardians of the people I work with might feel concerned, so I took it." **Although Mrs. Watase was never encouraged to vaccinate by the guardians of the people living in the group home, she said, "When I told someone I planned to take the vaccine, they said, 'Good'."**
- Regarding her own opinions, Mrs. Watase said, "I am not really pro-vaccine. I do not like medicines or doctors, and **I only took (the COVID-19 vaccine) to keep up appearances.**"

People nearby who are opposed to the COVID-19 vaccine (Mrs. Watase's best friend and her eldest daughter)

- Mrs. Watase's best friend lives in Saitama Prefecture and told her, "I am not taking the COVID-19 vaccine" early on. Describing her friend, Mrs. Watase says, "She is a naturalist who does not want to use medicines, and so she said she would focus on prevention." Regarding this stance, Mrs. Watase says "At first, I agreed with her."
- Mrs. Watase says her eldest daughter is also strongly opposed to the COVID-19 vaccine. **Mrs. Watase's eldest daughter strongly discouraged Mrs. Watase from taking the vaccine, saying, "It is not good to put foreign substances into your body."** Mrs. Watase said, "I overcame her objections and got vaccinated." Mrs. Watase's **eldest daughter likes Eastern medicine and is hesitant to undergo surgery or other treatments, and believes that illnesses should be treated through exercise and diet.** Mrs. Watase said her daughter is **"Very well-informed because she often looks up information on the internet."** Her daughter studied abroad in England, then moved to Australia, the home country of a friend she met in England, when she was around age 25. There, she supported herself through part-time work or teaching Japanese. Mrs. Watase said she developed such tendencies due to the influence of that friend.

The COVID-19 vaccine and Mrs. Watase's personal relationships

- Regarding the people around her, Mrs. Watase says "If you do not say you have taken the COVID-19 vaccine, they will view you as an eccentric." She says that her **younger brother contacted her** around the time vaccinations began **to tell her, "If you don't get the vaccine, you are unpatriotic."** In such circumstances, Mrs. Watase's feelings regarding long-term side effects are that "I don't think I need to worry about them, given my age," and regarding her volunteer activities, she said "I also felt it was my duty as someone who works with elderly people," so she took the vaccine.

- Mrs. Watase communicates with many of her friends daily over services like LINE and Zoom. COVID-19 infection rates and the COVID-19 vaccine are among the topics they discuss. Within those lively communication channels, Mrs. Watase has seen some people who are taking thorough measures to prevent COVID-19 from spreading as well as people who think that it is definitely the correct decision to take the COVID-19 vaccine, so **Mrs. Watase avoids mentioning that her eldest daughter opposes the COVID-19 vaccine and is unvaccinated**.
- In addition, a member of that group who was the last one to go unvaccinated was encouraged to get it by the other friends, who said, "You're the only one who hasn't taken it. We can't all get together like this." This finally convinced that friend to take the vaccine, too. In this manner, regarding the responses to the COVID-19 pandemic and vaccine, Mrs. Watase says, "There is great variation from person to person. My relationships with my friends are all messed up."

Sources of information Mrs. Watase trusts

- Mrs. Watase places the most emphasis on information she obtains from TV. When asked why, she said "They are quick to provide information, and I can see what is happening overseas." When asked if the information from TV programs and presenters is reliable, she replied, "If we are talking about the Governor of Tokyo, for example, then yes I do. I do not have a lot of education, but I recently started to think about how reliable the information is. When I change channels, the information that is provided also changes. The Cabinet Office is presenting different information from the Governors of Tokyo and Osaka. How can I trust them?"
- Other sources of information Mrs. Watase trusts include her friends and her local (city) government. First, Mrs. Watase is 74 years old and her friends are close to her in age, and she says, "Many of my friends have lots of time on their hands, so they have a huge amount of information. They look up all sorts of things and new information reaches me almost every day." However, regarding the information provided by her local government, Mrs. Watase says it is "Slow. It is clear to see that they just follow the central policies once they are set (by the national Government and the Tokyo Metropolitan Government). I feel like they are only implementing token countermeasures that are in line with the central policies."

Vaccines other than the COVID-19 vaccine

- Mrs. Watase and her husband have not taken the pneumococcal vaccine. When asked, she said, **"It's a hassle to get it, and I think we will be okay."** In addition, she says, "I hate injections, and I don't want to experience side effects." Regarding vaccines in general, she feels that she will be okay. She has also never taken the influenza vaccine.
- Many of Mrs. Watase's friends have already taken the pneumococcal vaccine and often ask her, "Why don't you get it?" **Mrs. Watase has friends who have contracted pneumonia even after taking it, so she feels "There is no point (in vaccinating)."**
- Regarding healthcare and vaccinations, Mrs. Watase's husband says, **"There's nothing to think about, is there? If I am told to take something, I take it."** When a notice regarding the pneumococcal vaccine for her husband arrived at their home, Mrs. Watase thought there was no point in taking it herself, and she said, "We've received a notice, but we don't need to take it, do we?" and that was the end of it.
- Additionally, three of her friends took the shingles vaccine and recommended it to Mrs. Watase, but she said, "I don't need it," and turned it down. She also thinks she will be okay without it, saying, "I feel like the people whose husbands have passed away are taking it. I think they are worrying about various things and feeling uncertain."

Distrust toward healthcare and improving one's own health

- In addition to influence from her eldest daughter, personal experiences with illness are

another reason that Mrs. Watase lacks full trust in healthcare. Thirteen years ago, Mrs. Watase was diagnosed with chronic myelogenous leukemia. “Even though I was taking expensive, harsh medicine, I feel like I was misdiagnosed, and that I was only experiencing a temporary elevation in platelets,” she says. Her daughter also says there is no doubt it was a misdiagnosis. After she started doubting the diagnosis, she says, “**Even if I was given prescriptions, I ignored them. I feel better without the medicine, and I was more comfortable not taking them.**” Based on that experience, she feels psychologically distant from medicine and doctors. Today, she does not have a family doctor.

- Mrs. Watase says she devotes herself to **improving her health over the course of everyday life** so she can avoid relying on healthcare whenever possible. In particular, since the outbreak of the COVID-19 pandemic, Mrs. Watase says, “I have been more careful with my diet. To help strengthen my immune system, I have a smoothie with lots of vegetables every morning, and do my best to include 30 items in my diet. I also started buying high-quality food like organics and additive-free food, even if it is more expensive. Because plastics aren’t good, I only buy soy sauce that comes in glass bottles. I also buy four bottles of expensive noni juice per month, because my daughter recommended it.”
- In addition, Mrs. Watase exercises daily, and she says that since the beginning of the COVID-19 pandemic, “I have lost a lot of weight and have become healthier.” In this manner, Mrs. Watase has been able to maintain good health and has avoided seeking medical attention, and has expressed no doubt regarding her hesitancy toward health institutions or vaccines.

4.2.10. Mr. Sunaga

Basic information

- Male, age 76; lives in Tama City, Tokyo with his wife, two children, and grandchild. He is self-employed.
- Mr. Sunaga lives with his wife (age 75; a part-time worker), their eldest son (age 49; a full-time employee), their eldest daughter (age 44; a full-time employee); and his eldest grandson (age 22; a university student).
- Mr. Sunaga is the owner of a sole proprietorship. He provides support for old friends who want to go independent or need to expand. He helps with employee training and productivity enhancements. He started his current work before reaching the age of retirement. After earning a degree in engineering, he originally worked as a full-time employee in the computer field, where his job involved planning, sales, and engineering. He has been involved in administrative leadership for many years. It was a multinational that made significant investments in employee training, but it was challenging work. Employees had to attend classes every week and pass examinations before they were given duties. Mr. Sunaga is now applying the know-how he obtained there in his current work. Said know-how involves the psychological aspects of sales, such as getting along with and engaging with people in order to get them to approve. He finds the work to be extremely enjoyable.

What gave Mr. Sunaga the opportunity to think about vaccinations

- I do not remember being vaccinated as a child. I imagine I must have been forced to take some as an infant. Regarding my own children, my wife can remember getting them the DPT vaccine or other combined vaccine, but we gave them no vaccines after that.

Mr. Sunaga's thoughts on vaccines

- **Personally, I do not have any expectations for vaccines to be effective, nor do I think they are effective.** Their effects that are described in their explanations are, to put it in extreme terms, based on what seems to be false data, or data that has been adapted and does not seem true.
  - (Why did you start thinking that?) When I was in my 20s and 30s, I met many people working in sales and was able to hear many inside stories from people at pharmaceutical companies or from doctors. I heard a number of doctors express opinions like, "Vaccines don't work, so I cannot support them. They are not as effective as people are told." Heaving the opinions that you usually cannot hear had an impact on me. That is one reason I began thinking they are ineffective.
  - After that, I had opportunities to get the influenza vaccine, but they could not explain to me why I had to take it. When I ask if taking it will prevent me from getting infected, I am told there is no guarantee it will. As for the doctors, they cannot explain and do not know why the vaccines are absolutely necessary. Although vaccines always have side effects, doctors only ever give general information.
  - This process made me start to think that if there was some method of protecting myself without taking the vaccine, I would like to try it.
- **Diseases are, of course, a threat.** But, if you can grasp how influenza spreads, you can take action to avoid it. I have never caught influenza.

Self-defense

- I developed diabetes in my mid-40s. At the time, I read many books to study the human body. After going over the basics, I quit smoking after having smoked 20 to 30 cigarettes daily. There were also times I also used to drink until the morning, and I started avoiding that. Now I only

have about a 200ml glass of wine with cheese, and I have kept my drinking to that level ever since.

- The three basics of health are diet, exercise, and sleep.
  - With regards to diet, I eat three balanced meals per day. My wife helps me with that. Even if you eat a balanced diet, there is no point if you eat low quality food, so I avoid anything containing pesticides. Foods produced in China are particularly dangerous, as we saw in the past with the gyoza incident. Just when I said I would stop eating at Ringer Hut because they were using food produced in China, I saw that they changed to domestic sources for their vegetables in the newspaper a few months later. For several decades, I have been taking responsibility for myself by my own careful research on what is safe or not. I count calories, as well, and at the beginning, I also kept careful written records. Once you get used to it and start feeling the effects on your body, it becomes fun to do.
  - You also have to exercise to digest what you have eaten, and you have to continue doing so every day. I walk 5,000 steps every morning and evening. You can keep careful track of how many steps you've taken if you wear a pedometer. I have a big dog that I walk with because it is boring to go for walks alone. Having a dog means that I have been able to keep up my walking regimen. Five thousand steps are too much for a smaller dog, so I got a big dog. I go for walks even when it rains or snows. I also play golf once a month or so.
  - Sleep six hours per night until age 60. After that, sleep seven hours per night. There is no point in sleeping 8 hours or more, and some doctors say it is harmful. There is an app on iPhone that shows your sleep quality if you keep it next to your pillow with a graph of when you are in light sleep or in deep sleep. I use that to manage my sleep.
- If you are thorough about making these sorts of things a habit and turn them into rules for yourself to follow, then your physical condition will become excellent. **In this manner, I am working to build up my immune system to develop a constitution that will allow me to avoid severe symptoms even if I get infected, without relying on vaccines. I practice self-defense.**
- Last year, my doctor told me I had an enlarged prostate and should get examined, so I had a biopsy taken. When I asked him what the chances were that the biopsy would find cancer, he said 50%, so I prepared myself. The result was not cancer. I was safe as long as I kept up my daily habits of strictly adhering to my rules for diet, exercise, and sleep. It is another question as to how accurate that is, but I started to have some confidence.

Correct information

- In order to think about vaccinating, what I want is information that is correct. But, even though such correct information exists, it is being left out. Among 100 pieces of information presented by the Government, only twenty of them get released with the negative information removed to avoid causing trouble for the Government. Releasing such information would confuse the public, who would criticize the Government in turn. While the supply of COVID-19 vaccines was being announced every day, the reason they had to make such a fuss over it was to hold the Olympics. On top of that, they had to do it so the pharmaceutical companies could profit. Their strategy has been to take advantage of these circumstances. Among those who approved the vaccines, there are some people who previously served as high-level executives at pharmaceutical companies. Those serving as directors at the WHO are also people who previously worked for pharmaceutical companies. Information from people like that cannot be trusted.
- I want them to avoid false information. We have finally learned that the number of deaths among vaccinated people was 1,600 deaths, but up until now, the number of people who died after vaccinating was never published.
- **I do not want to die from COVID-19, and I do not want to experience a severe case. If it is really true that the vaccine can help prevent those things, then I want to use it. But, there is**

not a single piece of information that makes me think that is really true. While I want them to give correct explanations, there are many doctors who are appearing on TV that say things like, "It is best to take a third dose. We expect it will be effective." I wonder if it is the exclusive right of experts to say things like that after kicking up such a fuss to get people to take the vaccine up until now.

- Even now, the number of new infections in Tokyo is over 5,000. It is only natural that this number would increase now that they are conducting large-scale testing for free. But they still are not tracking those infections closely enough. Two years have now gone by, but we still do not know where people are getting infected. While there are sometimes reports of clusters occurring at hospitals or after events, we do not know much about the people at all. Those cases should be thoroughly pursued with close cooperation from the public. Whether they know they have been infected or not, we should have everyone write down a detailed description of how they spent the past week, and have them disclose when they get infected. As it stands, we know that there was a sharp increase in the data on the number of infections, but we do not know the reason why.
- What is even worse is the MHLW circulated a memo to each municipal government which said to classify every death of an infected person as being caused by COVID-19, no matter if they died due to a traffic accident or some other cause. They talked about this on the news. It was definitely on TV. This was a publicity move to show the public that people are dying of COVID-19 to encourage them to vaccinate. That is the level of what the Government is doing. My work is related to computers and I have a degree in engineering, so I am more familiar than most people about the mathematical formulas used in statistics. Looking at their statistical data, it is just awful. I want them to think more about how to gather, sort, and analyze data, as well as how to present it. There is no concept behind how they gather data. The timing at which they gather data is bad. Yesterday, they announced that there were 5,000 infected people, but that is not accurate for the 18th. It is only the amount they collected on the 18th. If you look at the days the data is from, it is calculated by adding together separate data from three or four days before to arrive at 5,000 cases.

The COVID-19 vaccine (for which Mr. Sunaga is not vaccinated)

- My reasons for not vaccinating:
  - **Side effects**. Cases of thrombosis are appearing everywhere after the COVID-19 vaccine. A person in England died of thrombosis, and that was probably due to side effects. **At my age, you have to worry about thrombosis. It can mean your life, so that is the reason I want to avoid it.**
  - **Other than that, I am not counting on it being effective.** For conventional medicines, there has never been an approval at three months like with the COVID-19 vaccine. Just three months for such a dangerous virus. Pfizer said their vaccine is 95% at preventing infection, but I wonder if it is truly so effective. One professor at Niigata University said, "They took the data in the wrong way and it is actually only 19% effective." I think that data was from a clinical trial that involved about 600 or 700 people.
    - I saw this on an online stream. While I did work in the computer industry, I do not use Twitter or similar services. I do not have the time for information that is not credible and is irresponsible. It was something that came up while I was conducting a search. Keywords are important. I search after gathering the necessary know-how to pick the right keywords to search for to find the information I want.
- To me, letting elderly people take the vaccine first feels like they are conducting a clinical trial. It is no good if they are doing it to make money, and I do not think I will take it unless there is a fundamental change in how they think about safety. So **if I get infected with COVID-19 and die, I would like to think of that as the limit of my life expectancy**. If you take a COVID-19 vaccine and die, you will be called a one-in-100,000 case and that will be the end of you. I do

not know if it's one-in-100,000 or one-in-10,000. I want doctors and pharmaceutical companies to please prioritize safety, not profit. I want them to put people first.

- There is a drug called ivermectin that is used to treat diseases in animals. It's generic. It was said that ivermectin can be used to protect people like a COVID-19 vaccine. When it was given to people infected with COVID-19, they were cured. I heard that it was used frequently and to great effect in Africa, South America, and India. But they just happened to be developing an internal medicine for COVID-19 in the U.S., so a U.S. pharmaceutical company declared that ivermectin does not work. This is just my impression, but I think they copied and improved ivermectin and released it.
- I also told my wife the vaccine is dangerous and not to take it. I said at least wait to take it until after the Olympics are over. I said that once the Olympics are over, the way people approach the COVID-19 vaccine could change completely. Even if you take it now, it won't protect you from the Omicron strain, so there is no need to rush. My wife had the same opinion. Our children have not taken it yet either, but that was their decision. I have never forced them to do anything. It seems the number of people around me who have not taken it is greater than I expected.

The pneumococcal vaccine (which Mr. Sunaga has not taken)

- **I have only heard of the pneumococcal vaccine**, so I know of it. **The lungs are involved in the overwhelming majority of deaths among elderly people, so I am interested in how that vaccine can help prevent that.** Elderly people should be aware of it. It is far more frightening than COVID-19. However, I do not know much about the pneumococcal vaccine, so I cannot say if it is actually effective at protecting people.
- **(Did you receive any notices regarding pneumococcal vaccination?) I think I may have, but that is about the extent of my awareness.** I basically never think of taking any vaccine. I'm certain that when I saw a notice regarding that vaccine and heard about it, at the time, I did not arrive at the idea of taking it myself. Perhaps the wording was too formal or not presented in a way that drew my interest. Notices from the local government are not meant to appeal to the visual senses or to encourage people to take certain actions, but are messages they send out to protect themselves. They are lagging behind in ways to get people to take action. There are methods of presenting information that appeal to each age group. They may have used small print or did not include any catch copy. If I see any information on that vaccine, I would like to take a look at it.

The influenza vaccine (for which Mr. Sunaga is not vaccinated)

- I think I get notices about the influenza vaccine every year, but I do not need to take it. **I only see it as a strange cold.** I get a fever and experience some pain. I am practicing self-defense, so I am sure I can handle it even if I do catch it.

Mr. Sunaga's family doctor

- There is a clinic I have been using for fifty years and the doctor there is my family doctor. I have known him for very long so he gives me referrals to major hospitals. Lately, if you try to visit a major hospital without a referral, you have to wait a long time, but there is a referral system and I pay a referral fee of 3,000 yen or 5,000 yen. So, my family doctor serves as my window to major hospitals. While I do place a certain amount of trust in him, **I do not consult him on vaccines. I know he will just say, "Take the vaccine." He is in a position where he has to provide vaccines in line with the policy set by the Japan Medical Association, so I cannot rely on his advice.** Their direction is set according to political trends and they do not tell the truth.

5. Observations and suggestions for policy recommendations

5.1. Observations regarding the hypothesized factors for vaccine hesitancy

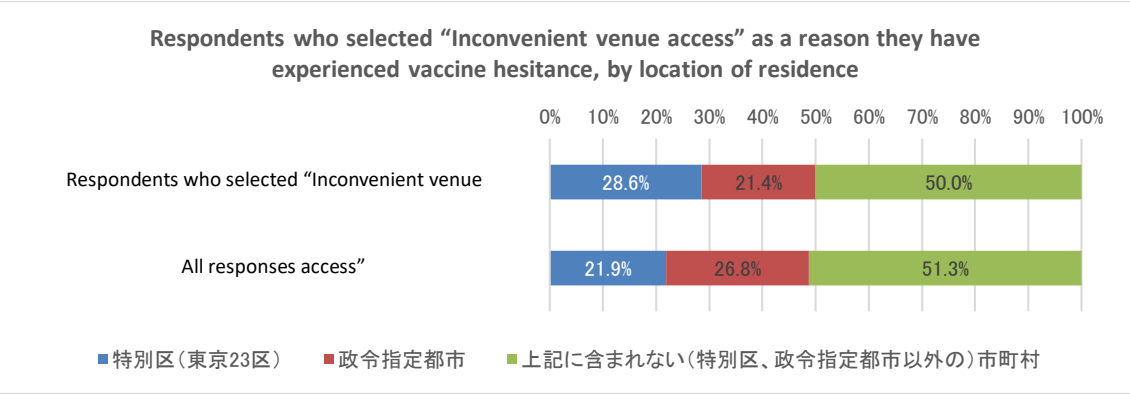
Accessibility

Accessibility is no more than a stress factor

During our expert hearings, one item that was pointed out by all participants was that groups who exhibit strong refusal, like those seen in Europe and the U.S., are almost non-existent in Japan, while most of the vaccine hesitant are in the middle group and feel uncertain or slightly hesitant. Given that, we arrived at the initial assumption that accessibility may be a significant factor for vaccine hesitancy in Japan. However, in the questionnaire conducted in preparation for the MROC, items related to accessibility such as "Inconvenient venue access" (4.3%), "The vaccinations themselves are expensive" (17.0%), and "Because of problems with how vaccines are provided (providers are too busy to get appointments, dates or times are inconvenient, the methods of making appointments are convenient, etc.)" (12.1%) did not have as significant an impact as the item that was selected most frequently, "Because I cannot trust that the vaccine will be safe" (61.6%). Instead, items related to accessibility were selected at rates comparable to "I hate injections" (13.9%).

We must also note that when we checked where respondents lived among people who selected "Inconvenient venue access" (4.3%) during the preliminary questionnaire, they were not significantly more likely to reside in municipalities other than special wards (which are the subdivisions of Tokyo) or cities designated by Government ordinance cities (which are cities with populations greater than 500,000).

Figure 5-5: Respondents who selected "Inconvenient venue access" as a reason they have experienced vaccine hesitance, by location of residence



(Blue: 23 wards of metoropolitan Tokyo; red: urban cities (1 million and above); green: others)

While accessibility was a factor that causes stress, statements made in the MROC and during the in-depth interviews make it difficult to say it was a significant factor for hesitancy. However, among factors related to accessibility such as appointments, venue access, and cost, respondents did tend to perceive vaccines as particularly expensive among healthcare-related expenses in general. While there were some comments that cited cost as an aspect that is linked to hesitancy, rather than being a primary factor, it can be considered as a secondary factor with a backdrop of other factors, such as trust in vaccine effectiveness.

- *It was not until I had a child of my own that I learned how expensive voluntary vaccinations are – some are almost 20,000 yen. I was surprised. (It seems some of them are free now, like*

those for rotavirus, hepatitis B, mumps, and chickenpox.) Although I did not put off having my child vaccinated due to the high cost, I have to admit I think prices like those pose a heavy burden. (Woman, age 39, Kanagawa Prefecture)

- *What concerns me right now is the cervical cancer vaccine. I have no medical knowledge, so my initial encounters are through information in the mass media, like on TV. I am having trouble shaking off the image of severe adverse reactions when the cervical cancer vaccine was suspended a few years ago, but my family doctor has recommended I get my child vaccinated. My eldest daughter is past the eligible age to get it for free, and I heard it would cost about 30,000 yen if she wanted to get it. That means it is too expensive (considering it cannot completely prevent the disease), so we did not consider getting it. (Woman, age 41, Hyogo Prefecture)*
- *The influenza virus mutates every year and I do not believe the vaccine can keep up. On top of that, it costs money, so I do not get it. (Man, age 60s, Fukuoka Prefecture).*

■ Proposed actions for this issue

- ✓ Expand vaccination venues and opportunities (workplaces, drugstores, drive-through vaccinations, annual pediatric checkups, etc.) and which professionals are allowed to administer vaccines (nurses, pharmacists)
- ✓ Use My Numbers instead of vaccine vouchers
- ✓ Vaccinations should be provided for free or at as low a cost as possible
- ✓ Rather than making all vaccinations mandatory, make them mandatory according to the characteristics of the targeted disease

Scientific literacy and information provision

Vaccine hesitant people do not exhibit noticeable information illiteracy or an inability to think scientifically

Among the people who expressed vaccine hesitancy that participated in the MROC and in-depth interviews, some did not trust the media itself or suspected that vaccination policies were backed by political or economic agendas that are not rooted in public health.

- *I don't trust what I hear on TV. They are too careful not to upset the pharmaceutical companies that sponsor them, and the truth is shrouded in darkness. (Woman, age 47, Tochigi Prefecture)*
- *Looking at how the world has been so preoccupied with vaccines, another reason is I can only think of it as being for the benefit of politicians and pharmaceutical companies. (Woman, age 41, Toyama Prefecture)*
- *It is impossible for anything to be 100% effective, including the vaccines we've had in the past. Despite that, Pfizer, Inc. recommended its first vaccine to the world while claiming it was at least 95% effective after clinical trials that only lasted a few months. No matter how I look at it, I can only see it as something that was done for political and economic reasons leading up to the Olympics. (Man, age 75, Tokyo)*

However, instead of basing their vaccine hesitancy on preconceptions alone, most respondents are proactive about gathering information and seem to possess a sense of self-awareness toward their ability to view information from the media in a somewhat objective manner. Additionally, they also had the relatively common trend to utilize different media according to the characteristics of the form of media in question or their willingness to prioritize the opinions of experts. These findings suggest there is no significant lack of information literacy among vaccine-hesitant people.

- *Generally speaking, no matter the method or form of media I use to obtain a piece of information, instead of trusting it outright, I do my best to consider the supporting data or*

evidence or how logical it is and take a relatively close look into it. (Man, age 62, Saitama Prefecture)

- *While I used TV, newspapers, and magazines to gather information, I made an effort not to take everything I heard or read at face value. When I came across opinions or information from researchers and doctors on Twitter or Facebook, I tried to pay more attention to that than those other forms of media. (Woman, age 27, Aichi Prefecture)*

In our expert interviews, Physician D mentioned three key points to cover when providing information: "(1) what kind of disease the vaccine targets (and its health risks); (2) the vaccine's effectiveness; and (3) the risk of side effects for the vaccine (and any relief systems that may be available)." However, participants in the survey tended to be interested in (2) and (3) while interest in "(1) what kind of disease the vaccine targets" was relatively sparse. While this may to a certain degree reflect the ratio of information provided by different forms of media like TV and the internet, in any case, it seems safe to conclude that participants are unable to feel the significance of vaccines due to insufficient understanding toward diseases themselves. If we consider the three points identified by Physician D as necessary for understanding vaccines correctly, then the people who attempt to understand information from all three perspectives are few in number overall.

- *You can't trust what you see on TV, so I gathered my information using the internet. I wanted to know the real information about vaccines, but I was unable to find anything clear. (Woman, age 41, Toyama Prefecture)*
- *I watch the news on TV. I search social networks and blogs and read articles that provide explanations on vaccines. I do it because I wonder how many people are at both ends of the spectrum – how many say vaccines are absolutely safe, how many are extremely uncertain, and how many adverse events there have been. I feel like there is no source that describes how dangerous (or safe) vaccines are or how effective (or ineffective) they are. (Woman, age 41, Miyazaki Prefecture)*

We must also mention that some participants had mistaken preconceptions toward vaccine policies. When participants were asked how they perceive routine and voluntary vaccinations, we observed the tendency for participants to underestimate the risks associated with diseases based on their preconceptions, especially for diseases targeted by voluntary vaccinations.

- *My impression is that voluntary vaccines only apply to rare cases, like when people are unlikely to get the disease in question whether they get vaccinated for it or not. I think that they are for low-risk diseases that only very careful people are concerned about, like fevers that people get in Africa. I do not think they are diseases with very high prevalence. (Man, age 28, Hyogo Prefecture)*
- *I was aware of the mandatory ones, the ones you have to get for your children before they turn one … My impression is that the voluntary vaccinations protect you from severe symptoms if you get infected. (Woman, age 41, Hyogo Prefecture)*

■ Proposed actions for this issue

✓ Provide accurate information from various angles, namely, the three perspectives of: (1) what kind of disease the vaccine targets (and its health risks); (2) the vaccine's effectiveness; and (3) the risk of side effects for the vaccine (and any relief systems that may be available). It is also desirable that information be made as easy to access as possible (for example, by advertising in places visited over the course of everyday life, such as in buses or trains; or by providing free pamphlets at hospitals or other places medical checkups are performed).

Perceived issues related to the content of physicians' explanations and opportunities for consultations from physicians

During our expert interviews, it was pointed out that one effective method of helping people who are uncertain about vaccinations become more likely to vaccinate is if family doctors and other physicians approach them on a personal basis. At the same time, they also pointed out there is insufficient knowledge and skills regarding vaccinations among physicians who do not specialize in pediatric medicine, particularly those whose work does not involve adult vaccines. In the MROC and in-depth interviews, respondents generally had high levels of trust in healthcare and toward physicians. At the same time, respondents also felt there are issues in the methods physicians use to interact with people who are unsure about vaccination on a personal basis.

- *It is much better to have a family doctor. The COVID-19 pandemic made me think about this, but because they know basic information about me, I find it much easier to talk to a family doctor. (Woman, age 19, Hiroshima Prefecture)*

This issue can be largely split into (1) the content of physicians' explanations and (2) opportunities to consult physicians. There are three key points regarding the former, namely: detailed explanations centered around side effects and vaccine effectiveness; the neutrality of explanations; and the importance of personal experiences and opinions. Because many of the vaccine hesitant participants in this survey were particularly interested in side effects and effectiveness, rather than giving explanations that begin and end with, "You should vaccinate," it is likely that such explanations should include deeper arguments on the reasons why someone should take a vaccine. Points for physicians to keep in mind when doing so include the tendency for people to easily assign labels to others – in this case, "anti-vaccine" or "pro-vaccine." There is also the concern that strongly recommending a vaccine can backfire and increase suspicion. It is important for physicians to pay ample consideration to neutrality. On top of providing explanations that are objective and neutral, our findings also suggested that physicians can help to mitigate vaccine hesitancy by disclosing their personal experiences taking vaccines and how they felt about doing so.

- *(Regarding the cervical cancer vaccine) Our doctor's stance was that there is still time before she is in the target age group, so I should keep a close eye on the situation. During the explanation, they said, "In general, it is better to take the vaccine, but since it is voluntary, in the end, I think it is up to the family to decide." That gave me the impression that while we are not postponing it, there is still a bit of time. (Woman, age 39, Kanagawa Prefecture)*
- *Vaccine supporters only express positive opinions and deniers only express negative ones, so the more I look into it, the more I question if I can place my full trust in the information that I find. (Woman, age 32, Saitama Prefecture)*
- *My concerns were alleviated when the doctor administering the group vaccinations told me, "If you have any questions at all, please let me know. This is what the side effects will feel like. Some people don't get them. I took this vaccine, too." I was grateful he said that. (Woman, age 41, Hyogo Prefecture)*
- *Because our family pediatrician has small children who are close to mine in age, I think I can talk to them and hear information like, "Here is what we are doing." … If a doctor tells me, "I won't give it to my kids," then I think I will not do so, either. (Woman, age 48, Tokyo)*

Regarding (2) opportunities to consult physicians, we found two main hurdles: hesitancy toward visiting a physician for the sole purpose of consulting them about vaccinations; and participants felt that physicians are too busy to be asked about vaccinations during normal consultations.

- *Our family doctor sees patients by appointment only now, so I only get to ask them things when I am there for some other reason. It would be difficult to go see them if I just wanted to ask about vaccines. (Woman, age 19, Hiroshima Prefecture)*
- *I do not think I would go see our doctor just for a consultation on the vaccination. While the doctor asks, "Is there anything else?" when they have the time, they try to cut the conversation short when the office is busy. This means there is not enough time to ask, or even a good time to ask. If there were opportunities to talk to them in detail about it, like during a consultation session, I think I would ask at that time. (Woman, age 48, Tokyo)*

■ Proposed actions for this issue

✓ Introduce motivational interviewing on an individual basis
✓ Have medical associations provide information to their physicians (it would be best if opportunities are created to also provide information to those who belong to university hospitals which are not affiliated with medical associations)
✓ Create opportunities to provide education and conduct training during medical education that covers disease characteristics, vaccine effectiveness, and adverse reactions (for example, by reviewing programs at universities)
✓ Create systems for medical license renewal that include periodic exams and training programs

The position of the media and characteristics of the internet

Biased reporting (reporting on topics like adverse reaction risk in a manner that causes anxiety)

The problem of biased reporting from the media was also pointed out during our expert hearings. Specifically, with regard to the cervical cancer vaccine, Physician A said, "Overblown media coverage (of adverse reactions) was a significant factor that caused the Government to recategorize the vaccine as one that is recommended rather than one that is actively recommended." Meanwhile, Physician B commented, "There were people who actually continued to experience ongoing troubles (due to adverse reactions), but disbelief was stirred when those stories were denied. The media played a large role in this by providing repeated and extensive coverage of these stories."

Findings from the MROC and in-depth interviews confirmed that the media and TV in particular is more likely to report sensational cases of adverse reactions, and that this may stoke feelings of anxiety. In addition to TV, we can also infer that online news can be used to the same effect if eye-catching topics or article headlines are selected.

While adverse reactions tend to naturally attract attention as a form of risk recognition, as described below, Physician C points out, "It is easier for people to evaluate information in a more quantitatively balanced manner if they gather it from broad resources. And, it is easier for people to make scientifically accurate decisions if they can evaluate information in a more objective manner from various angles." If we consider this to be the case, then the bias in the perspectives of information provided by the media may be one factor that prevents people from judging information properly. In addition, as Physician A said, "Information regarding adverse effects draws more attention, so it spreads more easily than information regarding the effects of vaccination." It is safe to say that this is a very important issue because information from the media is a major source of the information that spreads to secondary and tertiary sources through social networks and other sites.

- *I got sick of the bias I saw in the information provided on TV that was trying to push vaccines, so I started gathering information from various perspectives using the internet. (Man, age 31, Aichi Prefecture)*

- *I have strong feelings of uncertainty toward the cervical cancer vaccine. None of the people around me say that they have taken it. Because I do not hear about whether or not they have taken it, I have no opportunities to talk about it. I don't see much about it on TV. If news reports told me about how safe the vaccine is, I might think about it. (Woman, age 41, Hyogo Prefecture)*

There were also comments in which respondents reported that they noticed a bias in information presented by the media that harmed their trust in the media itself.

- *I don't trust what I hear on TV. They are too careful not to upset the pharmaceutical companies that sponsor them, and the truth is shrouded in darkness. On the internet, there are sites that introduce news stories from overseas or sites where doctors share opinions that differ from those in the mainstream, so I use those as references. However, no matter the source, I am careful not to simply believe everything that I read. (Woman, age 47, Tochigi Prefecture)*

Information varies among media outlets, making it difficult to judge

In addition to biased news reports, we would also like to introduce issues that came to light during the MROC survey and in-depth interviews. One such issue was that opinions and information vary among media outlets, making it difficult for people to judge what to listen to. In particular, this survey received many responses saying that it is easier for the media to emphasize the opinions of experts over individuals, and that it was difficult for respondents to make decisions when noticing differences in the information presented by experts. Regarding this point, during our expert meeting, Physician C said, "The media is only sharing part of the story. If they could see the entire picture, I think people would understand what they are talking about with regards to that point, but they cannot see the blueprint, or more accurately, the whole picture. They end up evaluating what they are told in the literal sense." As he says, one factor may be that the media is not presenting information in a manner that fully conveys the whole picture or the prerequisite conditions.

- *I took a somewhat neutral approach regarding information that needs more in-depth, scientific knowledge without placing too much faith in what most of the experts on TV were saying. For example, different doctors and experts on different TV stations were saying different things, and I did not know who to believe. For instance, they disagreed when discussing side effects, with some saying there were people who were left with extreme long-term complications, while others said there was nobody like that, or that those sorts of things can happen with any type of vaccine. (Man, age 28, Hyogo Prefecture)*
- *If we are talking about the Governor of Tokyo, for example, then yes I do. I do not have a lot of education, but I recently started to think about how reliable the information is. When I change channels, the information that is provided also changes. The Cabinet Office is presenting different information from the Governors of Tokyo and Osaka. How can I trust them? (Woman, age 74)*

<u>Culture and perceptions</u>

People tend to devote more attention to the risks of side effects as a form of risk perception

During the in-depth interviews, we observed that participants were more likely to focus on the side effects of vaccinations than the diseases in question as a form of risk perception. General risk perception toward vaccines is centered on the severity of side effects and their frequency. Taking a closer look at this tendency to focus on side effects among vaccine hesitant participants, however, we saw that instead of their personal chances of experiencing side effects, they tended to be more wary toward the potential for side effects to even occur. Instead of considering risk based on statistical frequency of occurrence or weighing the risks associated with getting infected against

those of vaccinating, respondents tended to emphasize vaccination status among those close to them, like friends and acquaintances; and whether there was the potential for side effects or not (in other words, the fact that their chances of experiencing side effects were not zero), which suggested these factors may be a source of vaccine hesitancy.

- *I have seen information online regarding the rates that side effects occur. I think it was also on the MHLW website. There are also websites from major hospitals that explain each vaccine. I think the rate was one out of thousands or tens of thousands. It might be unkind to the people who are suffering from side effects to say those rates are low, but they were not as high as I had expected. However, there is no guarantee that you will not become one of those people who suffers, which makes me hesitate.*

Insufficient awareness toward diseases as a personal matter

During the interviews, we observed that participants viewed the risk of VPDs as something that did not personally affect them as much as side effects. (Some said things like, "I won't be one of the people who gets sick," "I will be okay even if I get infected," or "If I get infected, then I'll just get treated.") While it goes without saying that the chances of being infected with a disease can be mitigated through vaccination, information or experiences related to the protective effects of vaccines were difficult for participants to grasp. Our findings suggested that the background to their lack of interest in vaccinations may include feeling psychologically distant from diseases in a manner that makes it difficult to understand the effectiveness of vaccines. (Respondents were unable to perceive, on an empirical basis, the difference between going uninfected because they took a vaccine and going uninfected without taking a vaccine.)

- *I have not taken the Hepatitis B vaccine, and I do not think I ever will. I think you can take it as an adult if you pay for it, but I do not know very much about hepatitis B, and I have the impression that it is something far away from me, so I did not take it. My impression is that it is similar to HIV. This might be the wrong way to put it, but I do not think I will get infected with something like that, so I feel like I will not be at risk if I am careful.*

■ Proposed actions for this issue

✓ Build social consensus that vaccinating is scientifically and medically correct

✓ Appeal to the visual senses and to emotions by implementing approaches that are based on visually demonstrating the disadvantages of going unvaccinated

Grasping circumstances surrounding vaccinations and side effects by listening to the opinions and experiences of others nearby

It was also suggested during the expert hearings that influence from people nearby like family members and friends could also be a factor for vaccine hesitancy. As we heard in comments like "I have the impression that there are no such divisions in Japan, and things are uniform… People prefer to do what everyone else is doing" (Physician C) and "In Japan, decisions are made according to the prevailing attitude, and the people in the middle shift to the left or the right when they feel uncertain" (Physician B), one characteristic of Japan may be that it has a larger population who base their decisions on the overall trends than Europe or the United States.

The MROC and in-depth interview results also showed that hearing opinions and experiences from people nearby are important when deciding to vaccinate. It seems safe to say that people find those they have face-to-face relationships with and whose psychological distance is close to them (like family members or friends) more trustworthy than anonymous people whose attributes they know nothing about. Some survey participants expressed the opinion that the opinions and experiences of people nearby were useful in helping them grasp the circumstances surrounding

vaccinations and adverse reactions. We can conclude that the tendency to emphasize the opinions and experiences of people close to them over scientifically sound and highly-accurate statistical information was a major characteristic among respondents to this survey.

- *I can believe stories from my friends and acquaintances, and they told me how tough the side effects were and gave me specifics on what items to prepare ahead of time, so their advice was very helpful in terms of getting mentally prepared. (Woman, age 41, Hokkaido)*
- *I can hear about many experiences from my close friends who are also women and near to me in age, and I think that in the end, that gives me peace of mind. (Woman, age 48, Tokyo)*
- *I exchange information and share opinions with family members and colleagues. While different people have different views, in my case, I feel I am following the opinion of the majority. (Man, age 48, Tokyo)*
- *I asked my friend who had been vaccinated before me about the side effects they had after taking the vaccine and their opinion on it. (Man, age 57, Nara Prefecture)*

At the same time, we also observed that even when asking for the opinions of those close to them, respondents were careful to place a certain amount of distance between them and the people they asked, even when those opinions were in line with their own values regarding whether to recommend or not recommend vaccinations. It seems they ask for opinions and experiences only to gather resources for making a decision of their own, and do not want others to interfere in their own decision-making regarding whether to vaccinate or not. Participants in our survey also widely expressed the opinion that they do their best to avoid pushing their own positions on vaccination onto others.

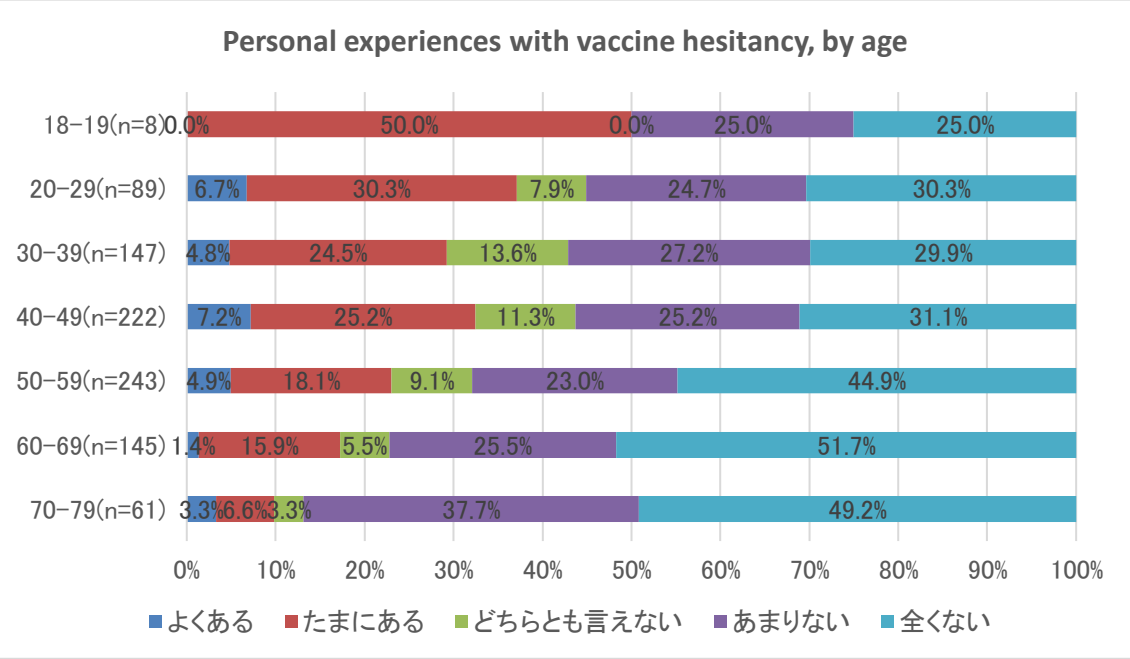
- *I do not talk about it at all with colleagues or friends at my workplace. Because I feel that it is a question of personal freedom, I do not want to force people to vaccinate by applying silent pressure. (Woman, age 27, Aichi Prefecture)*
- *I have overheard people who were talking somewhat loudly and saying things like, "You didn't take it? Why aren't you taking it?" It is their right to wonder why others might not be taking it, but I thought it would be better not to pester them about it and make them feel cornered. For example, while I think there may be some people who truly do not give it much proper thought and decide they will never take it, there are also some people who have preexisting conditions or face other risks that prevent them from taking it. People like that have no obligation to tell others openly about their conditions, so as long as they might have some background like that, I think it is sad that they have to be asked about it. (Man, age 28, Hyogo Prefecture)*

5.2. Other suggestions obtained from survey results

Awareness toward vaccinations among elderly respondents may be insufficient

The results of the preliminary survey showed that vaccine hesitancy tended to increase the lower the age group (Figure 5-6: Personal experiences with vaccine hesitancy, by age). Based on our awareness toward the issue of low vaccination coverage among elderly people, one of our objectives at the outset of this survey was to elucidate the situation surrounding vaccine hesitancy among elderly people. However, these findings suggest that awareness itself – such as people not knowing which vaccines to take in the first place – may be a key factor for low coverage.

Figure 5-6: **Personal experiences with vaccine hesitancy, by age**



(Blue: frequent; red: often; green:neither; purple: rarely; light blue: never)

- *I have only heard of the pneumococcal vaccine, so I know of it. The lungs are involved in the overwhelming majority of deaths among elderly people, so I am interested in how that vaccine can help prevent that. Elderly people should be aware of it. It is far more frightening than COVID-19. However, I do not know much about the pneumococcal vaccine, so I cannot say if it is actually effective at protecting people. I think I may have (received a notice regarding the pneumococcal vaccine), but that is about the extent of my awareness. (76-year-old male, Tokyo)*

Vaccine hesitancy is much stronger among women, especially those in their 40s

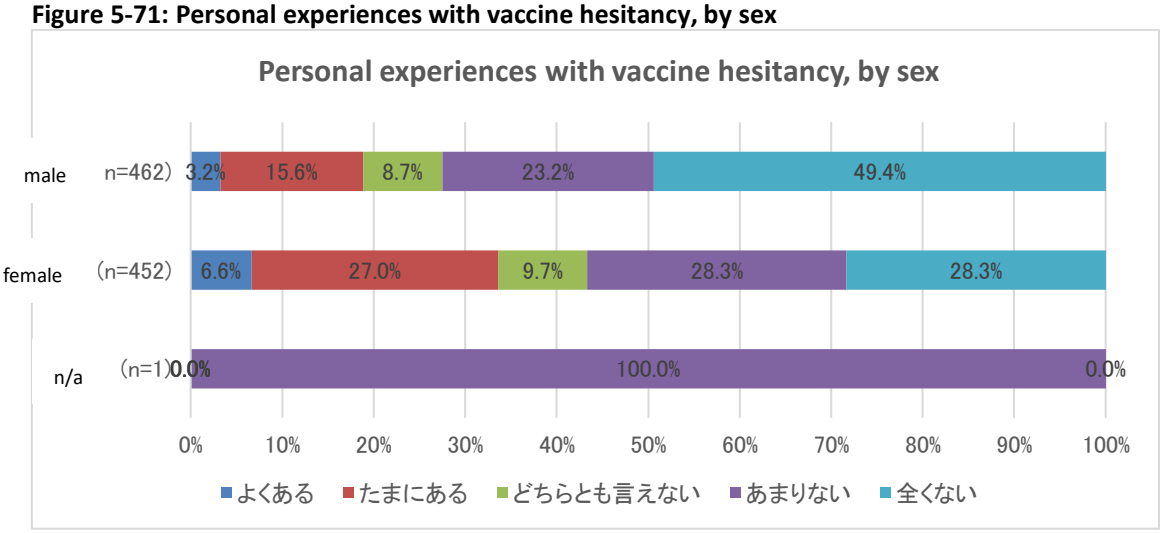
The preliminary survey found that women tended to have stronger feelings of vaccine hesitancy compared to men (Figure 5-7: Personal experiences with vaccine hesitancy, by sex). When we broke down responses by age group and excluded teenagers (due to a small sample size), we found that 41.4% of women in their 40s said they “Sometimes” or “Often” experience vaccine hesitancy, making them the most vaccine-hesitant group. This was much more than the 20.3% of men in their 40s who selected these responses (Figure 5-8: Personal experiences with vaccine hesitancy, by sex and age).

Factors that contribute to vaccine hesitancy among women in general might include the fact that

full-time housemakers may be more sensitive due to having more opportunities to be exposed to negative reports on vaccines in the media, particularly through TV; that wives tend to have more opportunities to be involved with their children's vaccinations than their husbands; and that they may be more sensitive to side effects. We heard similar comments during the expert hearings, such as from Physician C, who said, "My understanding is that there is consensus that biologically, women report more vaccine side effects. Women also report having strong side effects to vaccines more frequently." In addition to these factors, we can assume that the particularly strong vaccine hesitancy among women in their 40s is due to the strong influence of widespread media reports of adverse reactions to the cervical cancer vaccine. We can also assume that many of the female respondents in their 40s had children who were of or close to the age of eligibility for the cervical cancer vaccine, so it is easy to imagine that the negative impression left by news reports on adverse reactions to the cervical cancer vaccine and the later suspension of its active recommendation worsened how they perceive vaccines overall.

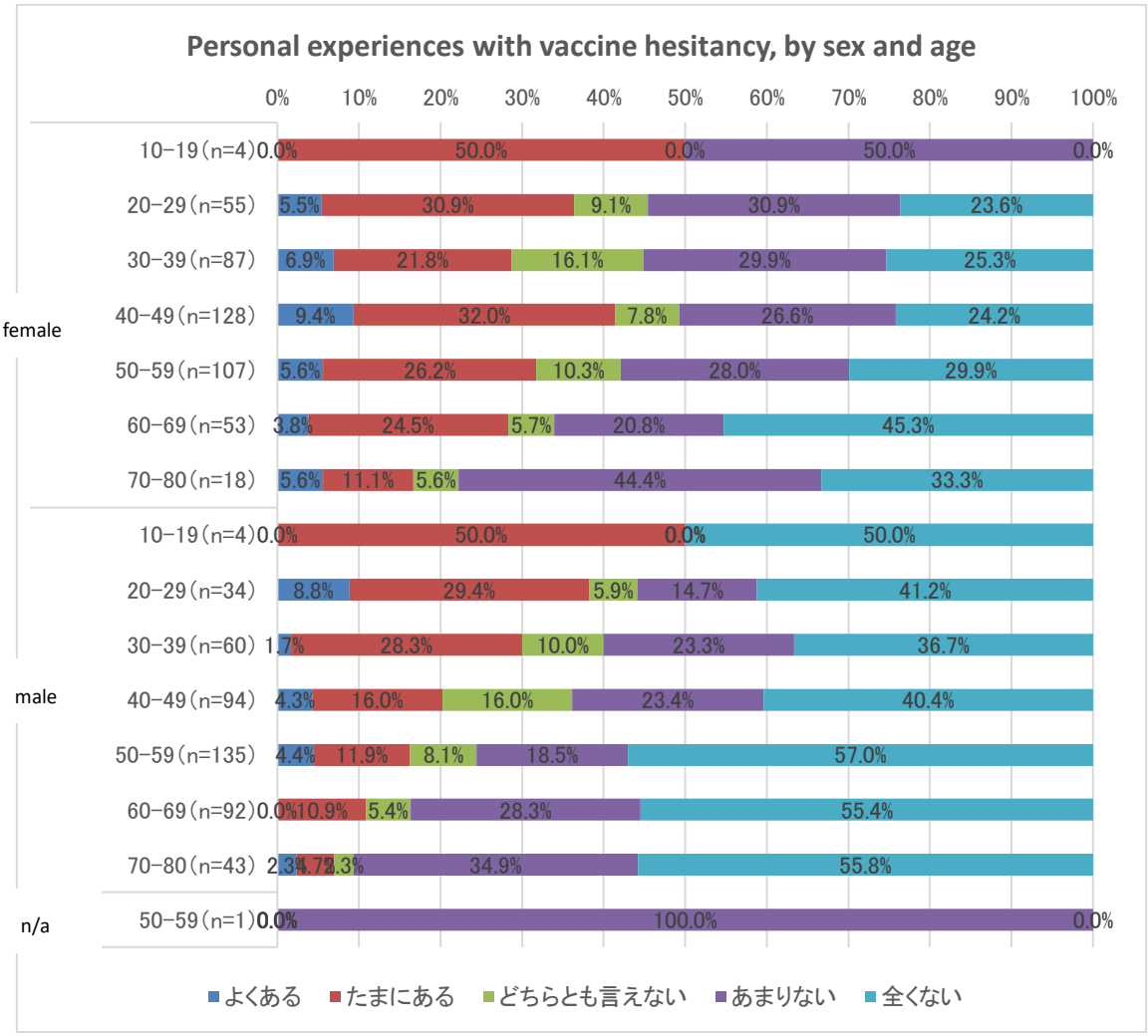
Personal experiences with vaccine hesitancy among female respondents in their 40s by occupation are as shown in Figure 5-9: Personal experiences with vaccine hesitancy among women in their 40s, by occupation. Overall, 41.4% of women in their 40s reported having experienced vaccine hesitancy (those who answered "Sometimes" or "Often"). By type of employment, vaccine hesitancy was reported by 57.1% of full-time employees (professional staff); 50.0% of full-time employees (general employment); and 53.3% of part-time employees, making it particularly high for these groups. However, only 38.3% of full-time homemakers reported experiencing vaccine hesitancy. Despite the aforementioned effect of media exposure leading to greater vaccine hesitancy, we must note that the tendency for full-time employees to experience vaccine hesitancy more frequently than full-time housemakers suggests that we cannot conclude that tendency toward vaccines hesitancy simply increases alongside opportunities for and duration of media exposure.

Figure 5-71: Personal experiences with vaccine hesitancy, by sex



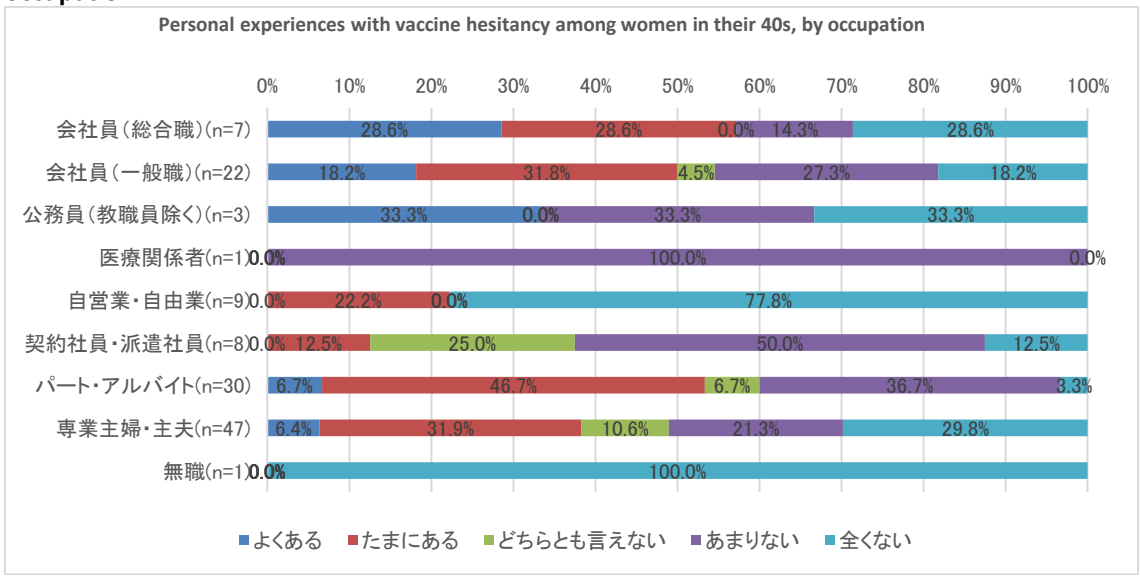
(Blue: frequent; red: often; green: neither; purple: rarely; light blue: never)

Figure 5-8: Personal experiences with vaccine hesitancy, by sex and age



(Blue: frequent; red: often; green: neither; purple: rarely; light blue: never)

Figure 5-9: Personal experiences with vaccine hesitancy among women in their 40s, by occupation



(Blue: frequent; red: often; green: neither; purple: rarely; light blue: never)
-Full-time (Professional staff)
-Full-time (General staff)
-Civil servant (other than teacher)
-Health professional
-Self-employed
-Contract or dispatch
-Part-time
-Full-time homemaker
-Unemployed

6. Summary of discussion points synthesized from study and perspectives for policy implementation

6.1. Discussion points

Based on suggestions from the cultural anthropological study described in the previous sections, the team at HGPI that conducted this study has compiled the following discussion points.

Discussion point 1: While leaving behind superficial hypotheses on the causes of vaccine hesitancy, steps must be taken to establish immunization and vaccination policies that are compatible with current circumstances in Japan.

While some have hypothesized that vaccination programs are hindered by inconvenient access to vaccination sites in rural areas, this hypothesis might not reflect real-world circumstances. In addition, some have also shared the hypothesis that vaccine hesitancy may be more prevalent among older age groups in Japan, but this, too, does not match actual circumstances. There are no issues related to vaccine literacy among the public or to media influence that are unique to Japan.

Discussion point 2: There is less vaccine hesitancy among elderly people compared to members of other age groups, but they are unaware of the existence of vaccines for older adults.

Owing in part to past practices in which mass vaccinations were conducted at elementary schools, the prevailing view of vaccines is that they are a health measure for children. As a result, few people recognize vaccines as a tool that can also be used to improve health for older adults. The fact that older people do not know that there are vaccines for their age group is highly likely to be an issue. Awareness-building activities must be implemented to convey the fact that there are many vaccines available for this age group and that they are effective tools for improving healthy life expectancies for older adults.

Discussion point 3: Although there is data showing that the chances of adverse reactions among those who vaccinate are extremely low, for people who are afraid of the risks of adverse reactions, exposure to such information tends not to relieve their concerns.

Despite the fact that numerical data on the low probability of adverse reactions due to vaccines has been disseminated, the fact that such chances are low may not have fully taken root among the public. Expectations are high for measures that focus on and emphasize the low probability of adverse reactions to convey this information in an effective manner, such as by comparing them to traffic accidents or by using other examples of probability.

Discussion point 4: Even when information on vaccine-preventable diseases (VPDs) is available, exposure to such information tends not to result in changes in vaccine-related behaviors.

While information on VPDs has been disseminated to a certain extent, it has not encouraged people to change their attitudes and begin to want to prevent or avoid those diseases, and may not be leading to changes in vaccine-related behaviors. It will be necessary to clearly convey information regarding VPDs and the dangers and risks they pose to life and health in a manner that encompasses perspectives on the serious risks VPDs pose to individual health in addition to a public health perspective.

Discussion point 5: Accurate information on vaccines must be provided by family doctors and other health professionals who are near and familiar to patients.

Rather than general information from sources like the media, people tend to rely on information from networks that are close to them and that they can trust. Because Japan's healthcare system has yet to fully implement the functions that are fulfilled by family doctors, there are disparities among individuals in terms of who has a family doctor that they feel close to and can trust. Expectations are high for steps to be taken to expand the functions of family doctors, to deepen the

family doctor specialty as well as to build a vaccine provision system that relies on family doctors to provide vaccines and correct information.

6.2. Perspectives for policy implementation

Based on the discussion points described above, we held a roundtable discussion with policy makers responsible for health in Kanagawa Prefecture, one of Tokyo's neighbors. There, we held an opinion exchange session based on the findings of this study and the discussion points our team synthesized to examine their potential to be implemented in real-world policy. We obtained the following perspectives on implementing these discussion points in policy. It must be noted that the initial objective of this study was to identify specific examples of tools for sharing information related to vaccines in facilities for elderly people with plans to implement them on a trial basis. However, the COVID-19 pandemic resulted in tighter restrictions for entering facilities for elderly people, and factors for vaccine hesitancy among elderly people were found to be absent or significantly different from those that were hypothesized, so the plan was changed to examine how to best structure comprehensive vaccine policies and to obtain perspectives on policy implementation. We have confirmed with Kanagawa Prefecture that they will take the discussion points obtained into account as they continue advancing vaccination policies.

Perspective for policy implementation 1 (regarding discussion point 2): The need to disseminate easy-to-understand information among older adults

This survey found that older adults are unaware of the existence of vaccines for their age group, which is a finding that is consistent with the administration's awareness of the situation. While people need easy-to-understand information on such vaccines, it is difficult for the administration to disseminate information using methods that emphasize ease of understanding. Reference materials from the administration tend to become complicated because the information contained must be accurate and scientifically correct, particularly when those materials include information on adverse reactions. It may be easier to utilize pamphlets and other reference materials that are created by parties like private companies, academic societies, and business groups and that have been designed with ease of understanding in mind. However, it can be difficult to distribute materials prepared by individual companies at public consultation offices or through similar channels. It may be possible to provide easy-to-understand reference materials more easily if they are created jointly with relevant companies and with cooperation from academic societies and similar parties. In addition, when attempting to reach older adults, paper-based reference materials are effective.

Perspective for policy implementation 2 (regarding discussion point 3): The need to improve methods for transmitting information regarding adverse reactions

Even though information regarding the low chances of vaccines causing adverse reactions is being provided in numerical terms, there is not broad awareness toward those probabilities among citizens. This finding is consistent with the administration's recognition of this issue. However, it is difficult for the administration to disseminate information in a manner that is based on probability theory and that focuses on the low chances that certain incidents will occur, such as when discussing traffic accidents. To address this, expectations are high for initiatives from the private sector and academic societies, just as in Perspective 1. The administration can help by providing specific instructions regarding what measures people should take in the event an adverse reaction does occur. It is desirable for such information regarding relief systems for adverse actions to also be provided alongside information disseminated during initiatives from the private sector or from academic societies. If the information in question is related to relief systems for adverse reactions, the administration can also utilize social networks to disseminate it, so such methods could be considered in the future.

Perspective for policy implementation 3 (regarding discussion point 4): The need for methods to approach uninterested people

Many vaccines for older adults are categorized as voluntary and target people who are in good health. As a result, in many cases, citizens tend to be passive toward or are uninterested in these vaccines. This finding is consistent with the administration's awareness of these circumstances. In particular, the lack of methods for approaching uninterested people and providing them with information related to health and vaccines is considered to be an issue. To reach people who do not possess very high levels of health or information literacy, information must be transmitted in a manner that is extremely easy to understand. Just as in Perspective 1, expectations are high for collaboration among the administration, the private sector, and academic societies to advance efforts to disseminate information.

Perspective for policy implementation 4 (regarding discussion point 5): The need to collaborate with family doctors

Our findings on collaboration among family doctors and the administration as well as the effectiveness of family doctors when providing vaccination-related information are consistent with the administration's awareness toward these items. Measures to expand the roles of family doctors are currently advancing in Japan. When holding discussions on those measures, expectations are high for the Government and each prefecture to seek to ensure family doctors can help provide appropriate information regarding vaccines for elderly people. However, on the administrative side, the departments and divisions responsible for examining the expansion of family doctor services are different from those that handle vaccination programs. Furthermore, municipal governments are responsible for vaccination programs rather than prefectural governments, so the hierarchy among administrative organizations is not properly aligned. This arrangement makes it difficult to reflect measures related to vaccination programs for older adults in measures for expanding the roles of family doctors. Expectations are high for various organizations including private companies, academic societies, and think tanks to continue to advocate for the need for cross-cutting initiatives that span administrative organizations.

6.3. Conclusion

We believe this cultural anthropological survey has clarified current circumstances surrounding vaccine hesitancy in Japan. In particular, our findings showed that general theories which have been circulated in society regarding cultural concepts of vaccine hesitancy that are unique to Japan or circumstances surrounding unique forms of vaccine hesitancy among older adults in Japan do not match real-world circumstances. Our survey also found that poor access to vaccination sites in rural areas and other presumed factors for vaccine hesitancy are not as significant as previously assumed. Utilizing survey research and analysis methods that are based on social science as well as public awareness surveys and other forms of quantitative research, HGPI would like to continue working to present truly evidence-based policy options to society. To conclude, we once again express our deepest gratitude to the experts and related organizations who lent their cooperation in this study as well as to the private individuals who contributed their opinions.

Regarding the Independent Nature of These Recommendations

These policy recommendations are based on discussions at meetings HGPI held for this project and has been compiled in HGPI's capacity as an independent health policy think-tank. It does not, in any capacity, represent the opinions of any participating expert, speaker, related party, or organization to which those parties are affiliated.

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