

Key persons who influenced behavior of mothers with young children and information resources during the COVID-19 pandemic in Japan

Miyako Kimura¹

Abstract

During the COVID-19 pandemic, a variety of information influenced people's behavior. Women often have the role of primary caregivers of children who are less likely to independently adopt appropriate preventive behaviors. In addition, since mothers of young children could be considered one of the most vulnerable groups during a pandemic, identifying their influential persons and sources of information, and reducing undesirable impacts of these on mothers need to be considered. This study explored key persons who influenced behavior of mothers with young children and information resources during the pandemic and described some of these cases that were undesirable for the mothers. In June 2020, based on cluster sampling an online survey was conducted, and a total of 2,489 mothers with young children from all 47 prefectures in Japan participated in the survey. Depending on the child-rearing status, the results varied significantly. Mothers who cared for their children only at home were significantly more influenced by their husbands and parents/other family members. In contrast, mothers whose children received care from others were significantly more influenced by children's teachers, colleagues, and prefectural governors of residential areas. Both groups of mothers spent the most time in acquiring information through TV news and Internet news, respectively. However, compared to mothers who cared for their children only at home, mothers whose children received care from others obtained more information from formal resources. Regardless of parenting status, undesirable aspects of TV news and talk shows were described, and these may have a direct/indirect impact on mothers with young children. During the pandemic, TV would need to report on the difficult situation parents and children are facing, rather than critically broadcasting their behavior.

Keywords

COVID-19, information, maternal behavior, media, mothers of young children

¹ Showa Women's University, m-kimura@swu.ac.jp

Introduction

COVID-19 was declared a pandemic in March 2020, and as of December 2023, nearly 7 million deaths had been confirmed (World Health Organization, 2023). With no certainty as to when the pandemic will end, people in the world have been making changes in their lifestyles, whether they prefer it or not. In Japan, no lockdown (city blockade) was implemented, though avoiding 3-Cs (closed spaces, crowded places, and close-contact settings) was recommended (Ministry of Health, Labour and Welfare, 2020) and a lot of companies have implemented telework (Ministry of Internal Affairs and Communications, 2021a). Schools across the country were required to close temporarily from March 2, 2020 (Ministry of Education, Culture, Sports, Science and Technology, 2020), and although most schools reopened in June of this year, parents of young children had to refrain from sending their children to preschool for a while in some areas, which was a very difficult time for them (Kimura et al., 2021, 2022a, 2022b).

In emergencies, various information often gets tangled up and during the COVID-19 pandemic, as in past outbreaks, the spread of misinformation has become problematic worldwide (Ministry of Internal Affairs and Communications, 2020). The term “infodemic” has gained attention. According to WHO, this is the overabundance of information, including misinformation and misleading information, in the digital and physical environment during a pandemic (WHO, n.d.). A joint statement by WHO, UN, UNICEF, UNDP, UNESCO, UNAIDS, ITU, UN Global Pulse, and IFRC on the management of the COVID-19 Infodemic: Promoting healthy behavior and mitigating the effects of misinformation and disinformation was released in September 2020 (WHO, 2020). In this context, misinformation and disinformation could be considered dangerous, which can damage people’s physical and mental health, increase stigma, harm valuable health benefits, and cause inadequate compliance with public health measures, thereby reducing their effectiveness and jeopardizing countries’ capacity to control the pandemic. Moreover, disseminated information also has a significant impact on social norms that may determine people’s behavior.

As is known, Japan is a super-aging society with older people accounting for 28.7% of the population as of 2020 (Statistics Bureau, Ministry of Internal Affairs and Communications, 2021). Since they have higher risks of COVID-19, it is critical to implement preventive behaviors not only for older people, but also for other generations in society. Thus, although the risk of death caused by COVID-19 infections in younger generations had been considered small in Japan, many of them took preventive behaviors that were recommended by the government (Official Website of the Prime Minister of Japan and His Cabinet, n.d.). However, different from adults, young children have difficulty in determining for themselves appropriate preventive behaviors, and it is expected that caregivers adopt the desired behaviors themselves and share them with their children. Kimura et al. (2022a) reported that mothers of young children in Japan implemented washing hands (88.3%), wearing face masks (87.9%), avoiding crowded place (84.4%), refrain from going out (77.3%), keeping social distance (67.1%), taking care of child’s condition (59.6%), paying attention to ventilation (58.9%), and providing balanced meals (55.7%) from March to May in 2020. Furthermore, of these eight infection-prevention behaviors, 30.3% of the mothers had implemented 6-7 of them, 32.7% had implemented all eight. These mothers’ behavior were linked to social pressures,

and others' words and deeds (e.g. touching babies) sometimes affected mothers' mental health and behaviors (Kimura, in press; Kimura and Yamazaki, 2023). Therefore, language, disclosure and society may have significant impact on mothers of young children, though studies on who are the key persons and what information sources influence their behavior have not been sufficiently accumulated.

1. Theoretical Framework

1.1. Women in pandemic

In society, women are still often the primary caregivers for children and are also considered to be one of the most vulnerable populations during pandemics (Kimura et al., 2021; Kimura et al., 2022a; Pierce et al., 2020; World Bank Group, 2020). For example, UN Women and Women Count (2021) reported that during the pandemic, both women and men lost their jobs, but women's paid working hours and income were reduced, and their recovery was slower than men's. In addition, women living with children were vulnerable to losing their economic security and bore the brunt of the increase in unpaid caregiving and domestic work. Especially, the most affected were women with partners living with their children (UN Women and Women Count, 2021). Furthermore, the high incidence of violence against women during the pandemic has been referred to as the “shadow pandemic.” (UN Women, n.s.).

Japan is falling behind other nations in terms of gender equality, as seen by the long-standing trend to see men's involvement in housework and childrearing as unmanly and the significant load of housework, childcare, and nursing that is still placed on women (Gender Equality Bureau Cabinet Office, n.s.). Under the pandemic, the gap became even more obvious (Study group on the impacts and challenges for women under the COVID-19, 2023). The previous study revealed that changes in circumstances due to the COVID-19 pandemic (e.g. shortage of relaxation time, increased difficulty in child rearing, increased partner aggression, increased sense of unfairness) were related to the development of depressive and anxiety symptoms among mothers of young children (Kimura et al., 2021, 2022b).

1.2 Cultivation theory

Cultivation theory was proposed by George Gerbner in the 1960s and 1970s to raise concerns about the long-term effects of television on viewers, shaping their moral values and general beliefs about the world (Mosharafa, 2015). Heavy TV viewers generally converse to a shared outlook despite differences in backgrounds, but light viewers, on the other hand, have different perspectives on the subject (Gerbner et al., 1980a). Park et al. (2022) used the cultivation framework of Gerber et al. (1980) and found that high exposure to misinformation disseminated during active and passive social media use was associated with distrust of information, which was also associated with low confidence in discerning the truth of misinformation. Gender differences were also reported by Gelgel and Ranteallo (2022). They conducted a survey related to COVID-19 infodemics of 440 men and women in Bali, Indonesia, and found that women, compared to men, were more

likely to accept the content of COVID-19 infomercials as accurate and that they felt themselves more likely to spread misinformation.

In 2020, the early stage of the COVID-19 pandemic, Ministry of Internal Affairs and Communications conducted a survey to find how people perceived and reacted to the information/news related to COVID-19. It concluded that there were a considerable number of people who believed such information even though they thought that it might be inaccurate (Ministry of Internal Affairs and Communications, 2020; 2021b). In practice, reports of family disruptions due to family member's belief in misinformation have also been accumulated (The Mainichi Newspapers, 2022; NHK, n.s.).

1.3. Social norms

Social norms have the capacity to shape the form and direction of attitudes and behavior of group members, especially individuals who strongly belong to the group (Neville et al., 2021; Smith and Louis, 2009). For example, where no legal provision exists, people wear face masks because others are wearing masks that seems to be an appropriate way to reduce risks of transmission (i.e., informational influence), or because people do not want others to have a negative impression of them by not wearing masks (i.e., normative influence) (Neville et al., 2021).

In Japan, Nakayachi et al., (2020) conducted an Internet survey targeting both men and women in their 20s to 80s in March 2020 and asserted that the most prominent driving force behind mask-wearing was conformity to social norms. Similarly, many mothers with young children during this period struggled with “forcing social norms without realistic considerations” as illustrated by qualitative data, including accusations of going out and accusations of undesirable manners (Kimura, in press). In this study, the word “masks” was the most frequently observed, occurring 168 times and negatively expressed by the mothers (e.g., mothers who were forced to wear masks on their babies complained that it was extremely uncomfortable).

Considering the above, language, discourse, and society have the power to influence behaviors of people during the pandemic, especially for vulnerable women with children. However, who has the greatest influence on these women, where they get their information related to COVID-19, and how these were perceived negatively have not been fully reported. Thus, it is essential to identify key persons and sources of information that influence mothers of young children to ensure they receive adequate information. In addition, to alleviate the psychological burden on mothers, it is also necessary to understand whose and what information could be perceived as undesirable. Therefore, this study explored key persons who influenced behavior of mothers with young children and information resources during the pandemic and described some of these undesirable cases for them.

2. Methods

2.1. Data Collection

The baseline survey was conducted from 6 to 17 February 2020, and the eligible participants were women aged 20–49 years, and had at least one young child (0–6 years). A research company with a survey panel throughout Japan asked their panel to participate in this online survey by email. The respondents who met the study’s eligibility in the screening questions (which asked about the age of the mother and child) proceeded to the main survey and only those who had completed all the responses were counted as participants. Recruitment continued in each of the prefectures and was completed in the order in which 100 participants were collected (cluster sampling). Thus, a total of 4,700 responses from all 47 prefectures in Japan (100 respondents per prefecture) were obtained. The follow-up survey was conducted from 16 to 30 June 2020. All participants in the baseline study were invited to participate in the follow-up study by email through the research company. The invitation to participate was closed at the end of the second week when the number of participants no longer increased. In total, 2,489 participants also completed the follow-up survey (response rate 53%). In this study, these 2,489 individuals were used as the cross-sectional data.

Sociodemographic variables included mothers’ age, annual household income in yen, educational background, employment status, marital status, child-rearing status, number of children, and child’s age. The child-rearing status was categorized as two groups: whether the child was only cared for at home or cared for in other places such as a nursery center, etc.

To describe persons who influenced behavior of mothers with young children during the COVID-19 pandemic, participants were asked about the 10 types of informational resources, which included nine related to family and occupational status, and one related to social media. Participants were asked, “Between March to May 2020, how much did their words and deeds influence your behavior?” Responses were graded on a four-point Likert scale (1 to 4), and divided into two groups (influenced or not influenced).

To assess sources of information about COVID-19 and time spent per day, participants were asked, “Please answer the question about the period March-May 2020. From which medium (or persons) did you receive information about COVID-19 and how much time per day?” They were asked to select one of the following six options for each of the ten sources: “I did not receive information,” “less than 30 minutes,” “30 minutes to less than one hour,” “one to two hours,” “three to four hours,” and “more than five hours.”

To understand how mothers perceived influential persons and informational resources as undesirable, I used secondary data from open-ended questions. In the open-ended question, participants were asked to write about their experiences with undesirable words and actions they received from others during the pandemic. Previously, I used these data to investigate mothers’ negative social support experiences (Kimura and Yamazaki, 2023; Kimura, 2023, Kimura in press). The present study used the descriptions based on the results of the quantitative data to illustrate undesirable aspects of influential persons and information resources.

2.2 Data analysis

Descriptive statistics were conducted on (1) the persons who influenced the mothers' behavior and (2) the sources of information and the time spent to obtain this information. This was followed by a chi-square test to examine if there were differences due to child-rearing status. Next, based on the results, I read the descriptions of open-ended questions several times. Then, the descriptions related to influential persons and information resources that influenced the mothers were extracted and collected.

2.3. Ethics

An ethical review board of St. Marianna University that was my affiliation when the research began approved this study. At the beginning of the online survey, participants provided informed consent.

3. Results

The participants' mean age was 35.6 years ($SD\pm 5.4$, range 20–49 years), and that of their infants and/or young children was 2.3 years ($SD\pm 2.0$ range 0–7 years). Of the 2,489 participants, 745 (29.9%) participants cared for their children only at home (home care), and 1,744 (70.1%) participants whose children received care from others (outside care).

3.1. Persons who influenced behavior of mothers with young children during the COVID-19 pandemic

Persons who influenced behavior of mothers with young children during the COVID-19 pandemic were shown in Figure 1. In total, more than half of the participants were influenced by the words of husbands (59.2%), TV commentators who were medical experts (56.7%), parents/other family members (54.5%), and teachers of children (54.4%). The words of TV commentators who were medical experts had more influence on mothers' behavior than the words of their family physicians/ health care providers (44.2%).

However, when comparisons were made by child-rearing status, there were differences in influential persons. Women who cared for their children only at home (home care) were significantly more influenced by their husbands (65.4%) ($P<0.001$) and parents/other family members (57.9%) ($P=0.029$). In contrast, women whose children received care from others (outside care) were significantly more influenced by children's teachers (62.6%) ($P<0.001$), colleagues (44.3%) ($P<0.001$) and prefectural governors of residential areas (51.6%) ($P<0.001$).

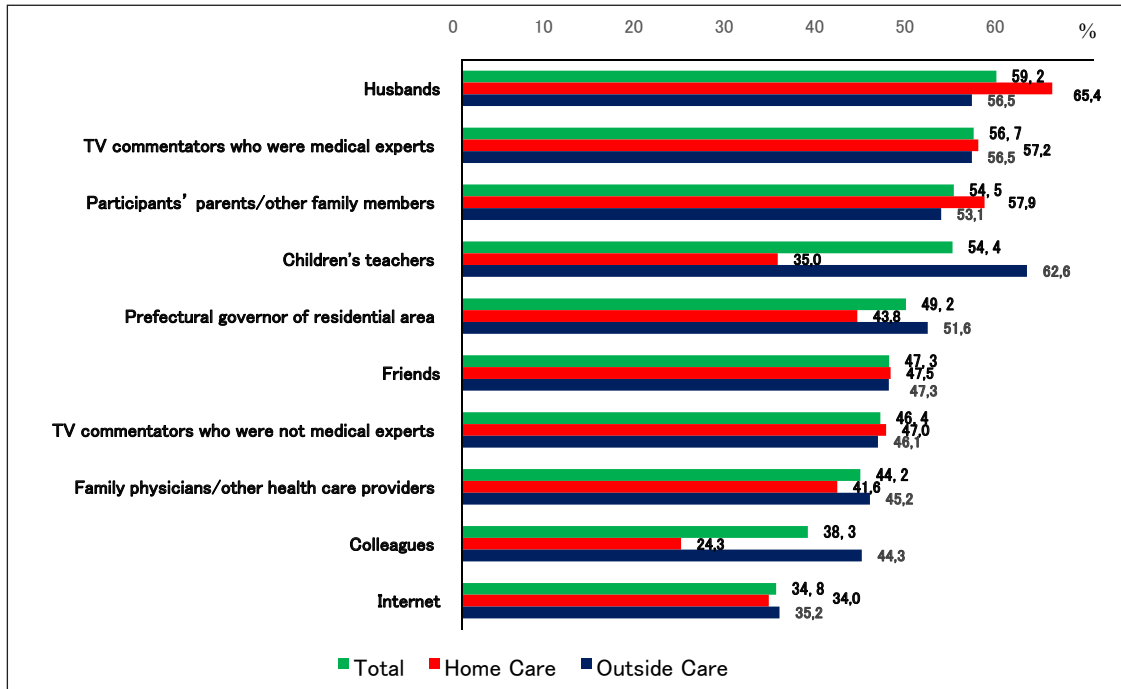


Figure 1. Persons who influenced behavior of mothers with young children during the COVID-19 pandemic

3.2. Sources of information and time spent per day

Figure 2 illustrates a comparison of sources of information about COVID-19 and time spent per day. TV news was the most used source (<30min.=45.5%, 30min.<1hr.=30.0%, 1to2hr.=14.0%, ≥3hr.=.7%), followed by Internet news and interactions with family and friends. The highest percentage of time spent, at 30 minutes, was associated with “Internet news” (59.9%).

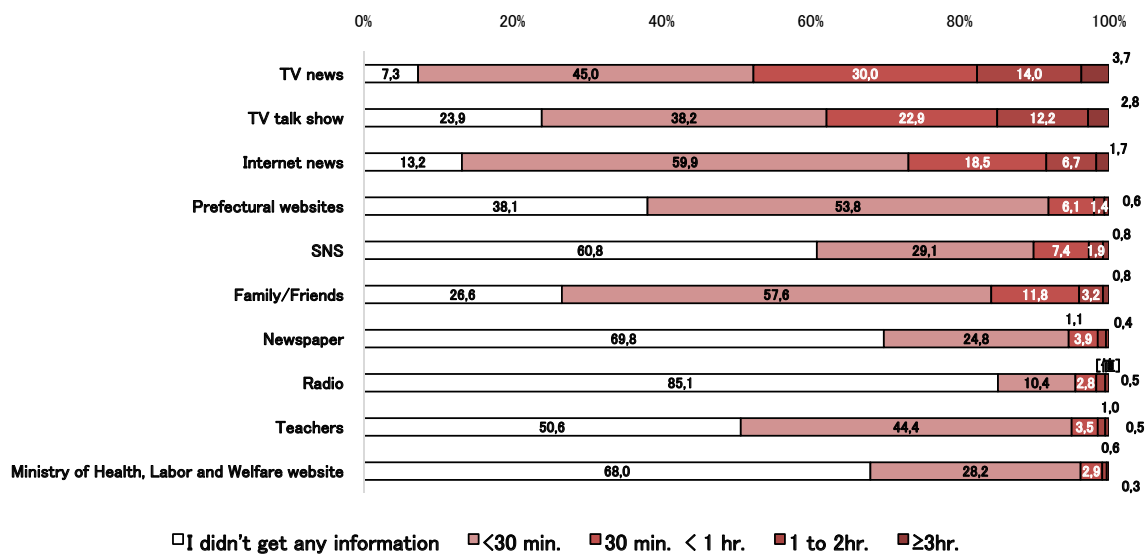


Figure.2. Sources of information about COVID-19 and time spent per day

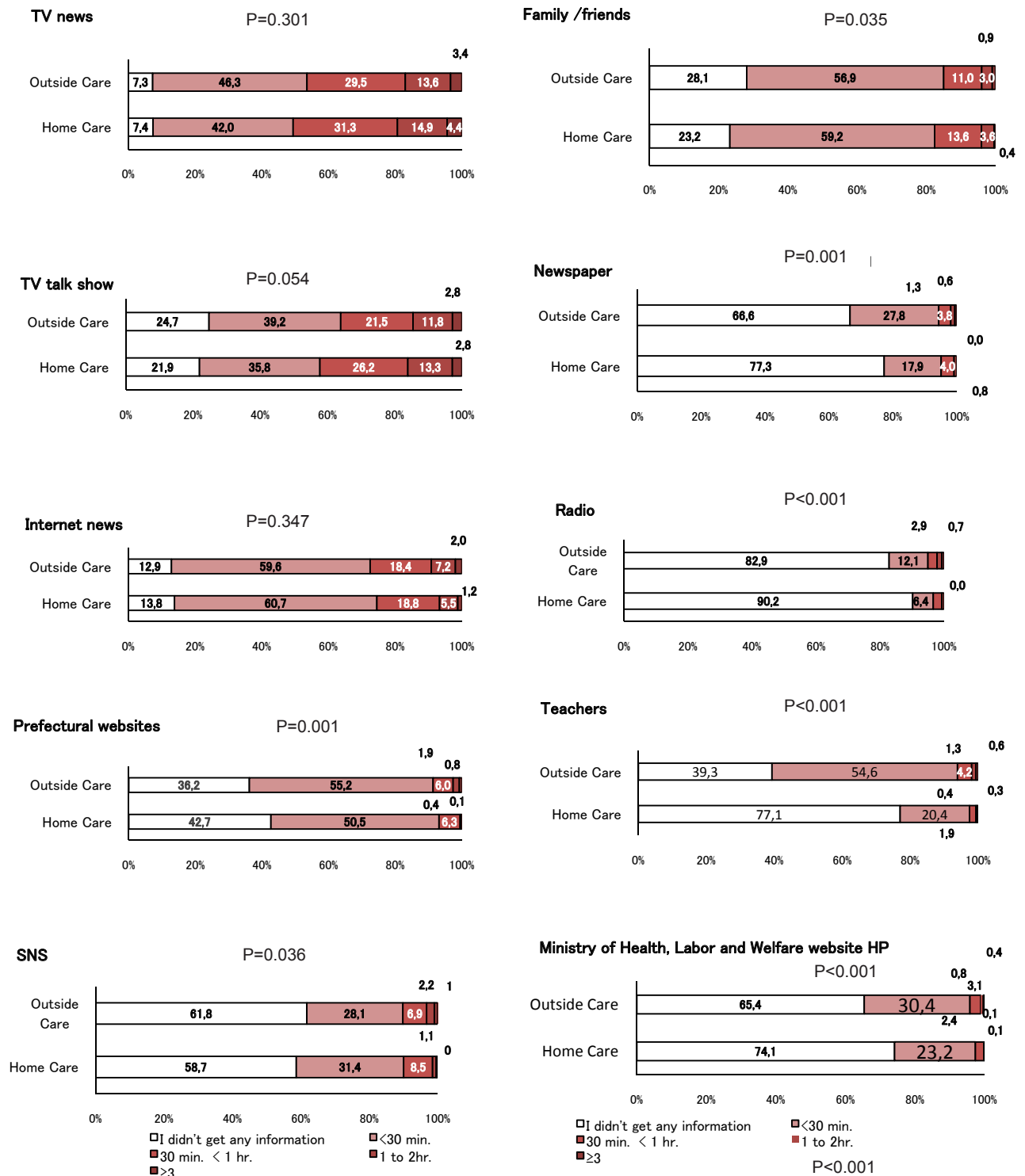


Figure.3. Sources of information about COVID-19 and time spent per day

3.3. Differences in sources of information and time spent per day based on child-rearing status

Figure 3. shows sources of information and time spent per day, highlighting their differences based on child rearing status. Both women who cared for their children only at home and women whose children received care from others spent the most time collecting the information from TV news and Internet news, respectively, and there were no statistical differences. On the other hand, compared to women who cared for their children only at home, women whose children received care from others obtained more information from prefectural websites, newspapers, radio, the Ministry of Health, Labor and Welfare website, and their children’s teachers ($P < 0.001$ respectively), and less interaction with family/friends ($P = 0.035$). The most significant difference in information sources was teachers, with 39.3% of the outside care group and 77.1% of the home care group that did not receive any information from them.

3.4. Description regarding undesirable cases

This section presents descriptions of influential persons and sources of information that the mother perceived as undesirable. Regardless of child-rearing status, the descriptions related to TV news and talk shows were the most commonly observed.

*I am a medical professional. It was hard for me to choose the right information about work and child-rearing. I was annoyed that the expert opinions on TV talk shows were inconsistent and entertainment commentators spoke as if they knew what they were talking about, even though they were amateurs. I did not believe such comments and tried to seek information from the websites of the prefecture and the government.
(Mother of a four-year-old child, providing care through a nursery school)*

*I almost stopped watching TV talk shows because I was uncomfortable with the broadcasting opinions of amateurs as if they were representative of the public. I thought it might lead to the spread of misinformation. I obtained the information I needed from the regular news, the press conferences of experts and heads of state that I could now watch on the Internet, and from the homepages of public organizations.
(Mother of a two-year-old child, providing care through a nursery school)*

The above examples represent the persons and media directly influencing the participants’ behavior (e.g., obtaining more reliable information from other sources). There were many descriptions expressing anger and questioning the accountability of non-expert TV talk show commentators for their statements. On the other hand, the following are examples of how the media influenced viewers including family members, which in turn indirectly influenced mothers with children.

*I was very uncomfortable with my mother-in-law and neighbors who were too reliant on the information on TV and gave their opinions without checking themselves.
(Mother of a less than one-year-old child, providing care through a nursery school)*

*Children playing in the park were featured on TV news and reported as if their activities were problematic.
(Mother of a three-year-old child, caring for child only at home)*

*A misguided older man was interviewed on TV and said, "I wish the young people would stay home," while he was free to go out.
(Mother of a one-year-old child, caring for the child only at home)*

Many participants expressed their complaints about TV reports showing children playing outside during the pandemic. They expressed concerns that people who watched these reports would blame both the children and their parents. In particular, their threat from older people can be seen in the following description.

*I heard that it was very difficult to let children play in the park, even for a short time, because if children played in the park during the restraining period, older people would report them to the police or the school, prompting patrols in the park. But older people themselves were gathering at community centers and having tea parties. Isn't that ridiculous?
(Mother of a five-year-old child, providing care through a nursery school)*

Especially, participants expressed a sense of unfairness toward situations where older people went out and participated in interviews or criticized parents and children for going out.

On the contrary, among the influential persons, significant differences were observed in the case of teachers based on their child-rearing status. Descriptions related to the teachers were only provided by women whose children received care from others.

*It wasn't my own experience, but a friend of mine attempted to leave her child at a nursery school because of her work, but one of the teachers asked her, "Is this really a necessary job? Do you consider the child's life first?" My friend was quite depressed by this teacher's strict words.
(Mother of a five-year-old child, providing care through a nursery school)*

*The nursery school has not been closed but the teachers asked me to refrain and I was forced to take time off. This is because I am self-employed, but I can't work with a little child and have no one to rely on. Since I cannot take care of my child when I get sick, etc., This creates strong anxiety.
(Mother of a two-year-old child, providing care through a nursery school)*

*My child's kindergarten reopened in June, but my child can only attend for one hour a day. Because of this, I have to pick up my child immediately after dropping him off, leaving no time to go home and do housework. My child does not have enough time to play, so I have to take him to the park. So, while I get up early in the morning to take my child to kindergarten, I have been more tired and stressed than before.
(Mother of a four-year-old child, providing care through a kindergarten)*

These examples indicate that while some of the individual teachers' thoughts influence the women, in many cases, the school system (in which the teacher acts as a communicator) greatly influences the women's daily lives. Moreover, even if the system itself is desirable, TV broadcasts that condemn working mothers whose children receive care from others may be psychologically burdensome to them.

Since I could not do telework at my job, I had to leave my child at nursery school and go to work as usual, a situation which was reported as wrong on TV. (Mother of a less than one-year-old child, providing care through a nursery school)

Husbands and family members were closely related to the women, and many of the descriptions were emotionally detailed. As already mentioned, many nursery schools and other institutions were reluctant to provide regular childcare. Thus, during the pandemic, working women whose children received care from others needed help from family members and husbands.

The children’s grandparents did not take care of them, but they said it was annoying to see me working while I was with my kids in the living room, which made me very uncomfortable. This led us to discontinue living together. (Mother of a three-year-old child, providing care through a nursery school)

Many of the working women asked their mothers to take care of their children, but some women did not obtain help. In addition, some women gave up asking for help, because their children might have a possibility to convey the coronavirus to their parents, at least their elders were afraid of it. Some women were directly criticized by their family members for their behavior.

When I took my child to my parents-in-law’s house nearby, they told me, “Don’t go outside hanging around. Don’t come over!” They yelled at me. (Mother of a seven-year-old child, providing care through an elementary school)

As for husbands, the availability of telecommuting and participation in child-rearing had a significant impact on women.

My husband wanted to stay home, but the company wouldn’t let him. So, he had to go to work every day complaining. If I took my children out with me, people complained. Because of this, I had to stay at home and care for my child all day long. I had a hard time staying alive. (Mother of a less than one-year-old child, caring for the child only at home)

My children could not go to school and preschool. It was especially difficult to take care of my two children, and it was so stressful. But I was able to overcome it with the help of my husband. (Mother of a six-year-old child, providing care through a nursery school)

While there were many differences in the couple’s and family’s views on infection prevention, the following case describes the decision-making process surrounding the child’s medical checkups.

The pediatrician’s association had disseminated that infant checkups were necessary, but my husband was worried about our child getting infected and insisted the checkups should be postponed. That’s why my baby was not able to receive the checkup. (Mother of a one-year-old child, caring for the child only at home)

In this case, the husband’s thoughts took priority over the expert’s opinion.

4. Discussion

This study represented key persons that influenced behavior of mothers with young children and their access to information resources during the pandemic in Japan. Also, it described some of these cases that were undesirable for the mothers. Depending on the child-rearing status, the results varied significantly.

4.1 Influential persons based on child-rearing status

The results of the quantitative data showed that women who cared for their children only at home were more influenced by their husbands and family members compared to women whose children received care from others. In contrast, women whose children were placed in other institutions were more influenced by children's teachers, colleagues, and prefectural governors of residential areas, which seemed to be understandable from the perspective of social norms.

According to Neville et al (2021), new coronavirus-related information was disseminated in January 2020, and people relied on others within their social group for direction on how they should react. Although every participant in this study belonged to their own family, women whose children received care from others also belonged to other social groups, and they may behave according to the norms of the groups.

Given that raising children only at home may require informal support, such as that from husbands and other family members, these women may be more influenced by these persons. However, the case descriptions showed that help from husbands and family members should be also important even for women whose children received care from others, especially during a pandemic. Since many of these women were working mothers, support from others should be necessary to maintain their jobs. In Japan, although schools were temporarily closed in March 2020, nursery schools taking care of working women's children were not closed during this period. Nevertheless, parents were asked to refrain from attending school. For women who were already receiving childcare outside the home, the teacher, as the communicator of school policy, may have a profound impact on their lives. Moreover, one of the examples of open-ended questions showed that the teacher said to a woman who brought her child to the preschool, "Do you consider the child's life first?" Such expression may impose pressure on working mothers and evoke feelings of guilt.

Similarly, various types of schools and other facilities may follow the policies of the local government, thus prefectural governors of residential areas may influence women whose children receive care from others. In addition, colleagues could play a role in coordinating time off from work, and observing how other mothers manage their child care may be helpful for working mothers whose children receive care from others. Therefore, such influential persons may differ depending on the child-rearing situation and social groups to which mothers belong.

4.2. Source of information and time spent based on child-rearing status

Both women who cared for their children only at home and women whose children received care from others spent the most time collecting information from TV news and Internet news, respectively. Ministry of Internal Affairs and Communications (2021b) conducted a survey during the COVID-19 pandemic and reported that TV was also ranked first as a media for “quickly learning about events and movements in the world” and “obtaining reliable information about movements in the world”. Thus, TV may be considered to be the most easily accessible information source. In addition, the most frequent duration of TV watching was less than 30 minutes, followed by 30 minutes to less than one hour, indicating that women of this study did not watch TV for a long period. Furthermore, as indicated in the cases, many women expressed distrust of TV commentators.

Previously, Gelgel and Ranteallo (2022) found that women tended to accept COVID-19 related information as accurate than men. Unlike the previous study, the present study did not compare men and women, but based on the descriptions of open-ended question, the women seemed to receive the information more cautiously. According to cultivation theory by Gerbner and Gross (1976), people who views an average of two hours a day or less was defined as light viewers. Thus, although the majority of the participants in this study depended on television as their source of information, these women were light viewers, and they are likely to check its reliability, accept it selectively, and be cautious about the effects it may have on other viewers.

TV may be accessible to busy women who are raising children, as they can watch it while doing housework and other chores. However, it must be noted that this study asked about the source of information that was well-obtained, and not about its trustworthiness. In addition, the women complained about the TV showing images of children going outside as if they were “virus spreaders”. Based on media framing theory, Aldamen (2023) surveyed Syrian refugee women and reported that the women’s image represented in the media is stigmatized in certain frames related to gender-based issues, and not reflected in individuals’ stories. According to Goffman (1974), to make people more aware of social events at a particular time, the media use frames, which could be considered as specific expectancy structures. Similar to these previous studies, the individual stories were not focused on, and only the images of insane women out with their children during the pandemic may be impressed on viewers by TV. Mosharafa (2015) introduced the long-term effects of television on viewers based on cultivation theory, and stated that television invisibly presents hidden values, rules, and morals of what is correct, what is essential, and what is suitable for social discourse. In the present study, however, a single television broadcast’s impact on society is considered significant under the prevailing fear of unknown viruses such as COVID-19.

Compared to women who cared for their children only at home, women whose children received care from others obtained more information from prefectural websites, newspapers, radio, the Ministry of Health, Labor and Welfare website, and their children’s teachers, and less interaction with family/friends. These findings align with the patterns observed in influential persons. Women whose children received care from others may be more likely to have jobs and require more official information related to COVID-19

and these may directly impact on child care. Additionally, some women may have many opportunities to collect information at work.

4.3. Undesirable cases and implications

The descriptions of open-ended questions in this study revealed that many participants critically reviewed the statements of TV commentators and strived not to swallow them, or sought to obtain more accurate information from other media. It was also shown that even if the women did not thoroughly believe the information on TV, the impact they had on the viewers may indirectly restrict their behavior.

For example, older people have a higher risk for severe coronary disease than other age groups, and they could be considered as heavy TV viewers (more than 5.5 hours/day on average, even on weekdays, NHK Broadcasting Culture Research Institute, 2021). These factors may contribute to requirements for others who follow strict social norms and may be one reason to blame mothers who go out with their young children. Therefore, instead of critically broadcasting images of children playing outside during the pandemic, it will be necessary for TV to report and broadcast the difficult situations faced by children and their parents who are unable to go outside.

There were also participants with high health literacy, including a woman who accessed the websites of pediatric societies to obtain specialist opinions. However, although such a woman tried to follow the recommendations of the specialists, she ultimately followed her husband's decisions, rather than those of the specialists. Whether this was due to power dynamics within the family was unclear, but it highlights the need to consider an approach to decision-makers.

In addition, the most common persons who influenced women's behavior were their partners, but it was not clear whether this indicated that men were still the decision-makers in Japan or that they discussed and acted together as a couple. Based on gender perspective, comparison with other countries would be needed.

In the workplace, it is suggested that the views of various experts, including those of pediatricians, could be posted where everyone can see them (e.g., displayed on notice boards). If experts' viewpoints are discussed in the workplace, an objective perspective can be brought into the decision-making process within the family on children's health.

4.4. Limitations

This study is conducted as an Internet survey, and there is a potential bias as only women who are registered as monitors can participate in the study. Also, the descriptions focused only on undesirable cases for the mothers, and thus no indications were obtained from desirable cases. Furthermore, the baseline survey obtained 100 subjects per prefecture, whereas the current survey, which recruited the same participants, was not able to gather the same number, which is not the desired cluster sampling. On the other hand, this study was based on quantitative data obtained from the questionnaire, but was also supported

by its open-ended descriptions to reinforce it. Using both quantitative and qualitative data, this study contributed to explain how women with young children were affected during the pandemic, both in terms of personal relationships and online discourses, and how these were linked to traditional maternal role expectations. These findings may be also useful for international comparative research.

Conclusion

This study presented key persons who influenced behavior of women with young children and information resources during the pandemic. Women who cared for their children only at home were significantly more influenced by their husbands and parents/other family members, whereas women whose children received care from others were significantly more influenced by children’s teachers, colleagues and prefectural governors of residential areas. Both groups primarily acquired information from TV news though, most of these women were categorized as light TV viewers and did not always believe the COVID-19 related information.

On the other hand, supplemental qualitative data indicated that expecting mothers’ role and social norms that may be influenced by TV broadcasting put pressure on these women with young children. Based on the results of this study, encouraging TV broadcasters to avoid reporting only single aspects of certain groups would reduce pressure on vulnerable groups and prevent intergenerational conflicts. These also implied how language/discourse and society impact on vulnerable population, such as women with children. Future research is needed to compare with other countries based on gender perspectives.

Acknowledgments

This study was supported by JSPS, KAKENHI Grant Number JP17H02612, JP22H03429, and JP23K24687. I would like to thank all the participants and Dr Tomoko Miyakoshi for her support of English language expression.

References

- Aldamen Y. (2023). How the media agenda contributes to cultivating symbolic annihilation and gender-based stigmatization frames for Syrian refugee women. *Language, Discourse & Society*, vol. 11, no. 2(22).
- Gelgel NMRA, Ranteallo IC. (2022). The COVID-19 infodemic: Women and digital (health) literacy. *Journal of Social and Political Sciences*, 5(4), 70-78.
- Gender Equality Bureau Cabinet Office.(n.s.) What is a Gender-Equal Society? https://www.gender.go.jp/english_contents/about_danjo/toward/society/index.html

- Georgiou GP. (2021). Words are not just words: how the use of media language in the COVID-19 era affects public health. *Epidemiology and Health*;43:e2021072.
- Gerbner G, Gross L. (1976). Living with television: The violence profile. *Journal of Communication*, 26(2), 172-194.
- Gerbner G, Gross L, Morgan M, & Signorielli N. (1980a). The mainstreaming of America: Violence profile no. 11. *Journal of Communication*, 30(3), 10–29.
- Gerbner G, Gross L, Signorielli N, et al. (1980b). Aging with television: images on television drama and conceptions of social reality. *Journal of Communication* 30(1): 37–47.
- Goffman E. (1974). *Frame analysis: An essay on the organization of experience*. Harvard University Press
- Kimura M. What negative social support occurred during the COVID-19 pandemic? Experiences among mothers of infants and/or young children in Japan. In: Cavaliere P, Otani J, eds. *Handbook of Disaster Studies in Japan*. Tokyo, Japan: MHM Publishers; in press.
- Kimura M, Ide K, Kimura K, Ojima T. (2022a). Predictors of happiness during the COVID-19 pandemic in mothers of infants and/or preschoolers: a pre-COVID-19 comparative study in Japan. *Environmental Health and Preventive Medicine* 27:14.
- Kimura M, Ide K, Ojima T. (2022b). Mental distress during the COVID-19 pandemic among mothers of young children and the related factors: A focus on their difficulties in raising their child, concerns about their child's development, social support, and capacity to receive support. *Japanese Society of Public Health* 69 (4) 273-283.
- Kimura M, Kimura K, Ojima T. (2021). Relationships between changes due to COVID-19 pandemic and the depressive and anxiety symptoms among mothers of infants and/or preschoolers: a prospective follow-up study from pre-COVID-19 Japan. *BMJ Open*. 2021 Feb 23;11(2) :e044826.
- Kimura M, Yamazaki Y. (2023). “Don’t Touch My Baby!”: Negative Social Support Experiences During the COVID-19 Pandemic and Their Impacts on Maternal Mental Health. *Asia Pacific Journal of Public Health*. 2023;35(6-7):441-444.
- The Mainichi Newspapers. (Mainichi Japan, March 21, 2022). Baseless coronavirus rumors damaging families, relationships in Japan. Retrieved from <https://mainichi.jp/english/articles/20220319/p2a/00m/0na/015000c>
- NHK (Japan Broadcasting Corporation) (n.s.). Fake Busters. <https://www.nhk.jp/p/ts/XKNJM21974/>
- NHK Broadcasting Culture Research Institute. (2021). National Living Time Survey. Retrieved from <https://www.nhk.or.jp/bunken/yoron-jikan/>
- Ministry of Internal Affairs and Communications. “State of information in circulation concerning the COVID-19” in COVID-19’s impact on society. (2020). 2020 White Paper on Information and Communications in Japan. (in Japanese).
- Ministry of Internal Affairs and Communications. (2021a) “Section 3: Changes in business activities in the COVID-19” in Part 1: Special feature: digitally supporting lifestyles and the economy. (2021). 2021 White Paper on Information and Communications in Japan (in Japanese).
- Ministry of Internal Affairs and Communications (2021b). “Dissemination of fake news and disinformation” in State of information in circulation concerning COVID-19. 2021 White Paper on Information and Communications in Japan (in Japanese).
- Ministry of Education, Culture, Sports, Science and Technology (2020). Information on MEXT’s measures against COVID-19. Retrieved from https://www.mext.go.jp/en/mext_00006.html
- Ministry of Health, Labour and Welfare. Basic policies for novel coronavirus disease control by the government of Japan (summary) March 28, 2020 (revised on April 16, 2020). Retrieved from <https://www.mhlw.go.jp/content/10900000/000624436.pdf>

- Mosharafa M. (2015). All you need to know about: the cultivation theory. *Global Journal of Human-Social Science: A Arts & Humanities – Psychology* 15(8).
- Nakayachi K, Ozaki T, Shibata Y, Yokoi R. (2020). Why do Japanese people use masks against COVID-19, even though masks are unlikely to offer protection from infection? *Frontiers in Psychology*. 2020;11:1918
- World Health Organization. Infodemic. (n.d.). Retrieved from https://www.who.int/health-topics/infodemic/understanding-the-infodemic-and-misinformation-in-the-fight-against-covid-19#tab=tab_1
- Neville FG, Templeton A, Smith JR, Louis WR. (2021). Social norms, social identities and the COVID-19 pandemic: Theory and recommendations. *Social and Personality Psychology Compass* 15(5): e12596.
- Official Website of the Prime Minister of Japan and His Cabinet. (n.d.). Useful Information on the Novel Coronavirus Disease (COVID-19). Retrieved from https://japan.kantei.go.jp/ongoingtopics/coronavirus_info_e.html
- Park YJ, Chung JE, Kim JN. (2022). Social media, misinformation, and cultivation of informational mistrust: Cultivating Covid-19 mistrust. *Journalism* 23(1):146488492210850
- Pierce M, Hope H, Ford T, et al. (2020). Mental health before and during the COVID-19 pandemic: a longitudinal probability sample survey of the UK population. *Lancet Psychiatry* 2020;7:30308–4.
- Smith JR, & Louis WR. (2009). Group norms and the attitude-behaviour relationship. *Social and Personality Psychology Compass* 3(1), 19–35.
- Statistics Bureau, Ministry of Internal Affairs and Communications. (2021). “Basic Complete Tabulation on Population and Households of the 2020 Population Census of Japan was released” News Bulletin December 28, 2021. Retrieved from <https://www.stat.go.jp/english/info/news/20211228.html>
- Study group on the impacts and challenges for women under the COVID-19. (2023). Report of a study group on the impacts and challenges for women under the COVID-19-Towards a post-corona society where no one is left behind. Retrieved from https://www.gender.go.jp/kaigi/kento/covid-19/siryu/pdf/post_honbun.pdf
- UN Women, Women Count. (2021). Women and girls left behind: Glaring gaps in pandemic responses. Retrieved from <https://data.unwomen.org/publications/women-and-girls-left-behind-glaring-gaps-pandemic-responses>
- UN Women. (n.s.). The shadow pandemic: Violence against women during COVID-19. Retrieved from <https://www.unwomen.org/en/news/in-focus/in-focus-gender-equality-in-covid-19-response/violence-against-women-during-covid-19>
- World Health Organization. Coronavirus disease (COVID-19) pandemic. (Last update: 20 December 2023). Retrieved from <https://www.who.int/emergencies/diseases/novel-coronavirus-2019>
- World Health Organization. (2020). Managing the COVID-19 infodemic: Promoting healthy behaviours and mitigating the harm from misinformation and disinformation. Retrieved from <https://www.who.int/news/item/23-09-2020-managing-the-covid-19-infodemic-promoting-healthy-behaviours-and-mitigating-the-harm-from-misinformation-and-disinformation>
- World Bank Group. (2020). Gender Dimensions of the COVID-19 Pandemic. Retrieved from <http://documents.worldbank.org/curated/en/618731587147227244>
- Park YJ, Chung JE, Kim JN. (2022). Social media, misinformation, and cultivation of informational mistrust: Cultivating Covid-19 mistrust. *Journalism* 23(1):146488492210850.