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Short Communication

Examining persuasive message type to encourage staying at home during the COVID-19 pandemic and social lockdown: A randomized controlled study in Japan

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A B S T R A C T

Objective: Behavioral change is the only prevention against the COVID-19 pandemic until vaccines become available. This is the first study to examine the most persuasive message type in terms of narrator difference in encouraging people to stay at home during the COVID-19 pandemic and social lockdown.

Methods: Participants (n = 1,980) were randomly assigned to five intervention messages (from a governor, a public health expert, a physician, a patient, and a resident of an outbreak area) and a control message. Intention to stay at home before and after reading messages was assessed. A one-way ANOVA with Tukey's or Games–Howell test was conducted.

Results: Compared with other messages, the message from a physician significantly increased participants' intention to stay at home in areas with high numbers of people infected (versus a governor, p = .002; an expert, p = .023; a resident, p = .004).

Conclusion: The message from a physician which conveyed the crisis of overwhelmed hospitals and consequent risk of people being unable to receive treatment increased the intent to stay at home the most.

Practice implications: Health professionals and media operatives may be able to encourage people to stay at home by disseminating the physicians’ messages through media and the internet.

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1. Introduction

The outbreak of the coronavirus disease 2019 (COVID-19) has emerged as the largest global pandemic ever experienced [1]. Experts have proposed that social lockdown will lead to improvements such as controlling the increase in the number of infected individuals and preventing a huge burden on the healthcare system [2–4]. Governments of many countries across the world have declared local and national social lockdown [4,5]. In April 2020, the Japanese government declared a state of emergency, which allows prefectural governors to request residents to refrain from unnecessary and nonurgent outings from home [6]. However, despite such governor declarations, people in various countries have resisted and disregarded calls to stay at home [7–9]. Because social lockdown is the only existing weapon for prevention of the pandemic until vaccines becomes available to treat COVID-19, behavioral change in individuals regarding staying at home is crucial [3,4]. Many news articles about COVID-19 are published daily by the mass media and over the internet. Such articles convey messages from governors, public health experts, physicians, COVID-19 patients, and residents of outbreak areas, encouraging people to stay at home. This is the first study to examine which narrator's message is most persuasive in encouraging people to do so during the COVID-19 pandemic and social lockdown.

2. Methods

2.1. Participants and design

Participants were recruited from people registered in a survey company database in Japan. The eligibility criterion was men and women aged 18–69 years. Exclusion criteria were individuals who answered screening questions by stating: that they cannot go out because of illness or disability; that they have been diagnosed with a mental illness; or/and that they or their family members have been infected with COVID-19. A total of 1,980 participants completed the survey from May 9–11, 2020, when the state of emergency covered all prefectures in Japan. Participants were included according to the population composition ratio in Japan.
nationwide by gender, age, and residential area. Participants were randomly assigned either to a group that received an intervention message (i.e., from a governor, a public health expert, a physician, a patient, and a resident of the outbreak area) or to one that received a control message. The study was registered as a University Hospital Medical Information Network Clinical Trials Registry (number: UMIN000040286) on May 1, 2020. The methods of the present study adhered to CONSORT guidelines. The protocol was approved by the ethical review committee at the Graduate School of Medicine, University of Tokyo (number: 2020032NI). All participants gave written informed consent in accordance with the Declaration of Helsinki.

2.2. Intervention and control messages

We searched news articles about COVID-19 using Yahoo! JAPAN News (https://news.yahoo.co.jp), the largest Japanese news portal site. We also searched videos posted by residents of outbreak areas such as New York using YouTube (https://www.youtube.com/user/YouTubeJapan). By referring to these articles and videos, we created five intervention messages from a governor, a public health expert, a physician, a patient, and a resident of an outbreak area. The content of each message encouraged readers to stay at home. We included threat and coping messages in each intervention message based on protection motivation theory (PMT) [10,11]. Appendix A shows the five intervention messages used in this study, translated into English for this report. For a control message we obtained textual information about bruxism from the website of the Ministry of Health, Labour and Welfare (https://www.e-healthnet.mhlw.go.jp/).

2.3. Measures

The primary outcome was intention to stay at home. The secondary outcomes were PMT constructs (i.e., perceived severity, vulnerability, response efficacy, and self-efficacy). Participants responded to two or three questions for each measure (see Appendix B). These measures were adapted and modified from previous studies [12–15]. All primary and secondary outcomes were measured before and after the participants read intervention or control messages, and mean scores were calculated. Higher scores indicated greater intention and perception. All participants were asked for their sociodemographic information before they read intervention or control messages.

2.4. Sample size

Based on the effect size in a previous randomized controlled study [16], we estimated a small effect size (Cohen's d = .20) in the current study. We conducted a power analysis at an alpha error rate of .05 (two-tailed) and a beta error rate of .20. The power analysis indicated that 330 participants were required in each of the intervention and control groups.

2.5. Statistical analysis

A one-way analysis of variance (ANOVA) was conducted with the absolute change in mean values for each measure before and after intervention as the dependent variable and the group assignment as the independent variable. For multiple comparisons, Tukey's test was conducted on significant main effects where appropriate. The Games–Howell test was performed when the assumption of homogeneity of variances was not satisfied. Additionally, we conducted subgroup analyses including only participants who lived in 13 "specified warning prefectures," where the number of infected individuals showed a marked increase [17]. A p value of <.05 was considered significant in all statistical tests. All statistical analyses were performed using IBM SPSS Statistics for Windows, Version 21.0 (IBM, Armonk, NY, USA).

3. Results

Table 1 shows the participants' characteristics. Tables 2 and 3 present a comparison among the five intervention groups using one-

| Table 1 | Participants' sociodemographic information. |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Sex, men, % | Governor (n = 330) | Expert (n = 330) | Physician (n = 330) | Patient (n = 330) | Resident | Control (n = 330) | Total (N = 1,980) |
| 18–29 years old | 49.7 | 49.7 | 49.7 | 49.7 | 49.7 | 49.7 | 49.7 |
| 30–39 | 16.1 | 16.1 | 16.1 | 16.1 | 16.1 | 16.1 | 16.1 |
| 40–49 | 23.6 | 23.6 | 23.6 | 23.6 | 23.6 | 23.6 | 23.6 |
| 50–59 | 20.6 | 20.6 | 20.6 | 20.6 | 20.6 | 20.6 | 20.6 |
| 60–69 | 21.2 | 21.2 | 21.2 | 21.2 | 21.2 | 21.2 | 21.2 |
| Residential area, % | | | | | | | |
| Hokkaido | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 |
| Tohoku | 7.9 | 7.9 | 7.9 | 7.9 | 7.9 | 7.9 | 7.9 |
| Kanto | 32.4 | 32.4 | 32.4 | 32.4 | 32.4 | 32.4 | 32.4 |
| Hokuriku and Chubu | 17.9 | 17.9 | 17.9 | 17.9 | 17.9 | 17.9 | 17.9 |
| Kinki | 16.7 | 16.7 | 16.7 | 16.7 | 16.7 | 16.7 | 16.7 |
| Chugoku and Shikoku | 8.8 | 8.8 | 8.8 | 8.8 | 8.8 | 8.8 | 8.8 |
| Kyushu and Okinawa | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 |
| Specified warning prefectures, % | | | | | | | |
| Less than high school | 16.8 | 17.3 | 16.2 | 16.3 | 17.8 | 15.5 | 64.3 |
| High school graduate | 29.1 | 25.2 | 24.2 | 23.0 | 27.0 | 27.0 | 26.0 |
| Some college | 21.5 | 24.5 | 28.2 | 22.7 | 26.4 | 21.5 | 24.1 |
| College graduate | 43.6 | 39.1 | 38.2 | 42.1 | 36.7 | 44.5 | 40.7 |
| Graduate school | 4.2 | 9.4 | 8.2 | 9.1 | 8.2 | 5.8 | 7.5 |
| Household income, % | | | | | | | |
| Less than 2 million yen | 7.9 | 9.7 | 8.8 | 9.4 | 8.2 | 11.5 | 9.2 |
| 2–6 million yen | 42.7 | 43.3 | 40.0 | 46.1 | 45.5 | 46.1 | 43.9 |
| More than 6 million yen | 41.8 | 34.5 | 42.1 | 35.2 | 36.1 | 33.6 | 37.2 |
| Unknown | 7.6 | 12.4 | 9.1 | 9.4 | 10.3 | 8.8 | 9.6 |

* One US dollar is roughly equivalent to 100 yen.
Table 2
Comparison of amount of change before and after intervention among groups when including all prefectures (N = 1,980).

|                         | Governor (n = 330) | Expert (n = 330) | Physician (n = 330) | Patient (n = 330) | Resident (n = 330) | p<sup>a</sup> | Control (n = 330) |
|-------------------------|--------------------|------------------|--------------------|-------------------|--------------------|-------------|------------------|
|                         | Before | After | Change | Before | After | Change | Before | After | Change | Before | After | Change | Before | After | Change |                  |
| Intention               |        |       |        |        |       |        |        |       |        |        |       |        |        |       |        |                  |
| (0.73)<sup>b</sup>     | 4.72   | 4.89  | 0.17   | (0.74) | 4.81  | 5.09  | (0.04) | 4.74  | 5.01  | 0.27   | (0.71) | 4.69  | 4.91  | 0.22   | (0.74) | 4.78  | 4.96  | 0.18   | .098   |
| Severity                | 4.42   | 4.48  | 0.06   | (0.84) | 4.34  | 4.51  | 0.17   | 4.25  | 4.42  | 0.17   | (0.86) | 4.24  | 4.57  | 0.33   | (0.90) | 4.37  | 4.51  | 0.14   | <.001  |
| (0.79)                  | 0.06   | 0.06  | 0.00   | 0.24   | 0.24   | 0.24   | 0.10   | 0.10   | 0.20   | 0.24   | 0.09   | 0.21   | 0.40   | <.001  | 0.84   | 0.88   | –0.07  | –0.14  |
| Vulnerability           | 3.04   | 3.19  | 0.15   | (0.86) | 3.10  | 3.24  | 0.14   | 3.09  | 3.21  | 0.12   | (0.89) | 3.05  | 3.46  | 0.41   | (0.90) | 3.16  | 3.58  | 0.42   | <.001  |
| Response                | 4.42   | 4.67  | 0.25   | (0.85) | 4.47  | 4.79  | 0.33   | 4.40  | 4.76  | 0.36   | (0.86) | 4.46  | 4.71  | 0.29   | (0.83) | 4.50  | 4.74  | 0.24   | <.065  |
| Self-efficacy           | 4.67   | 4.85  | 0.18   | (0.75) | 4.72  | 4.94  | 0.22   | 4.67  | 4.95  | 0.28   | (0.73) | 4.67  | 4.85  | 0.17   | (0.78) | 4.72  | 4.92  | 0.20   | <.089  |
| (0.73)                  | 0.23   | 0.23  | 0.01   | 0.28   | 0.35   | 0.23   | 0.23   | 0.23   | 0.23   | 0.26   | 0.26   | 0.26   | 0.26   | 0.26   | 0.26   | 0.26   | 0.26   |

<sup>a</sup> Mean.
<sup>b</sup> Standard deviation.
<sup>c</sup> 95% confidence interval.
<sup>d</sup> p values for comparing amount of change among intervention groups using ANOVA.
<sup>e</sup> Significantly higher than other intervention groups by multiple comparisons.

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Table 3
Comparison of amount of change before and after intervention among groups when including only the “specified warning prefectures” (N = 1,274).

|                         | Governor (n = 214) | Expert (n = 220) | Physician (n = 207) | Patient (n = 208) | Resident (n = 227) | p<sup>a</sup> | Control (n = 198) |
|-------------------------|--------------------|------------------|--------------------|-------------------|--------------------|-------------|------------------|
|                         | Before | After | Change | Before | After | Change | Before | After | Change | Before | After | Change | Before | After | Change |                  |
| Intention               | 4.72<sup>f</sup> | 4.89  | 0.17   | (0.72)<sup>f</sup> | 4.88  | 5.07  | 0.19   | (0.72)<sup>f</sup> | 4.75  | 5.08  | 0.34   | (0.72)<sup>f</sup> | 4.72  | 4.92  | 0.14   | (0.76)<sup>f</sup> | 4.81  | 4.99  | 0.17   | .003   |
|                      | (0.75) | (0.11) |        | (0.69) | (0.25) |        | (0.70) | (0.27) |        | (0.76) | (0.23) |        | .003   |        |        |        |
| Severity               | 4.40   | 4.46  | 0.06   | (0.84) | 4.29  | 4.51  | 0.22   | (0.84) | 4.21  | 4.45  | 0.23   | (0.85) | 4.26  | 4.56  | 0.30   | (0.90) | 4.35  | 4.45  | 0.10   | <.001  |
|                      | (0.84) | (0.25) |        | (0.84) | (0.23) |        | (0.84) | (0.32) |        | (0.85) | (0.32) |        | <.001  |        |        |        | .03    |        |
| Vulnerability          | 3.07   | 3.23  | 0.16   | (0.86) | 3.12  | 3.24  | 0.12   | (0.88) | 3.14  | 3.24  | 0.10   | (0.90) | 3.11  | 3.49  | 0.38   | (0.90) | 3.14  | 3.56  | 0.42   | <.001  |
|                      | (0.70) | (0.25) |        | (0.91) | (0.22) |        | (0.99) | (0.19) |        | (0.95) | (0.37) |        | .04    |        |        |        | .03    |        |
| Response               | 4.46   | 4.69  | 0.23   | (0.84) | 4.49  | 4.85  | 0.36   | (0.84) | 4.41  | 4.78  | 0.37   | (0.84) | 4.41  | 4.69  | 0.28   | (0.88) | 4.54  | 4.73  | 0.19   | .005   |
|                      | (0.70) | (0.30) |        | (0.84) | (0.44) |        | (0.80) | (0.37) |        | (0.86) | (0.37) |        | .04    |        |        |        |        |        |
| Self-efficacy          | 4.68   | 4.85  | 0.17   | (0.75) | 4.81  | 5.00  | 0.19   | (0.77) | 4.68  | 5.01  | 0.33   | (0.76) | 4.70  | 4.86  | 0.16   | (0.76) | 4.74  | 4.94  | 0.21   | <.008  |
|                      | (0.73) | (0.23) |        | (0.74) | (0.28) |        | (0.71) | (0.23) |        | (0.85) | (0.23) |        | .03    |        |        |        |        |        |

<sup>a</sup> Mean.
<sup>b</sup> Standard deviation.
<sup>c</sup> 95% confidence interval.
<sup>d</sup> p values for comparing amount of change among intervention groups using ANOVA.
<sup>e</sup> Significantly higher than other intervention groups by multiple comparisons.
way ANOVA and multiple comparisons when including all prefectures and only participants who lived in the specified warning prefectures, respectively. More significant differences between intervention messages were found in the specified warning prefectures compared with all prefectures. In Table 3, the Games–Howell test indicates that the message from a physician increased participants’ intention to stay at home significantly more than other narrators’ messages (versus a governor, \( p = .002 \); an expert, \( p = .023 \); a resident, \( p = .004 \)). Multiple comparisons demonstrated that the message from a physician increased participants’ perceived severity (versus a governor, \( p = .015 \)), response efficacy (versus a resident, \( p = .014 \)), and self-efficacy (versus a governor, \( p = .022 \); a patient, \( p = .009 \)) significantly more than other narrators’ messages.

4. Discussion and conclusion

4.1. Discussion

As Appendix A shows, the message from a physician specifically communicated the critical situation of hospitals being overwhelmed and the consequent risk of people being unable to receive treatment. Depiction of the crisis of overwhelmed hospitals may have evoked heightened sensation that elicited sensory, affective, and arousal responses in recipients. Social lockdown presumably evoked psychological reactance in many individuals [18]. Psychological reactance is considered one of the factors that impedes individuals’ staying at home during a pandemic [18]. Studies of psychological reactance have indicated that heightened sensation is the feature of a message that reduces psychological reactance [19,20]. Additionally, in Japan recommendations by physicians have a strong influence on individuals’ decision making owing to the remnants of paternalism in the patient–physician relationship [21]. These may constitute the reasons for the message from a physician generating the greatest impact on recipients’ protection motivation.

Public health professionals, governors, media professionals, and other influencers should use messages from physicians and disseminate relevant articles through the media and social networking services to encourage people to stay at home. It is important that health professionals and media have a network and collaborate with one another [22]. To build relationships and provide reliable resources, health professionals are expected to hold press conferences and study meetings with journalists. Through such networking, journalists can acquire accurate information in dealing with the pandemic, such as using messages from physicians to encourage people to stay at home. Consequently, journalists should disseminate such messages. It is also important that governments, municipalities, medical associations, and other public institutions convey messages from physicians and that the media effectively spread those messages. Owing to the advances of Web 2.0 [23], health professionals’ grassroots communication with journalists and citizens via social media may provide opportunities for many people to access persuasive messages from physicians.

4.1.1. Limitations

First, the content of the intervention messages in this study may not represent voices of all governors, public health experts, physicians, patients, and residents of outbreak areas. Second, it is not clear from this study which sentences in the intervention message made the most impact on recipients and why. Third, this study assessed intention rather than actual behavior. Finally, it is unclear as to what extent the present findings are generalizable to populations other than the Japanese participants in this study.

4.2. Conclusion

In areas with high numbers of infected people, the message from a physician, which conveyed the crisis of hospitals being overwhelmed and the consequent risk of people being unable to receive treatment, increased the intention to stay at home to a greater extent than other messages from a governor, a public health expert, a patient with COVID-19, and a resident of an outbreak area.

4.3. Practice implications

Governors, health professionals, and media professionals may be able to encourage people to stay at home by disseminating the physicians’ messages through media such as television and newspapers as well as social networking services on the internet.

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CRediT authorship contribution statement

Tsuyoshi Okuhara: Conceptualization, Methodology, Formal analysis, Investigation, Writing - original draft, Funding acquisition. Hiroko Okada: Methodology, Investigation, Writing - review & editing. Takahiro Kiuchi: Supervision, Writing - review & editing.

Declaration of Competing Interest

The authors declare that there is no conflict of interest.

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Appendix A.

Intervention: The message from a governor

The following is a message from the governor of your local area.

“As the novel coronavirus spreads, now is a crucial time in deciding whether we will see an explosive growth in the number of cases. The same epidemic and overwhelmed hospitals that have occurred in cities abroad can occur here. Unless absolutely essential, please refrain from going out unnecessarily and stay at home. Please do not go to these three high-density places: closed spaces with poor ventilation, crowded places where many people gather together, and intimate spaces where you would have conversations in close proximity. As for commuting, please work from home or stagger commuting times where possible to reduce contact with other people. The action taken by all of us will be the most effective remedy in overcoming this disease and ending the coronavirus epidemic quickly. We will do our utmost to improve our healthcare provision system, prevent the spread of infection, and mitigate the impacts on the local economy. Let us all work together to overcome this difficult situation.”

Please avoid leaving your house as much as possible. Staying at home can save lives and prevent the spread of infection.
Intervention: The message from an expert

The following is a message from an infectious disease control expert.

“One characteristic of the novel coronavirus is that it is difficult to notice that you are infected. As a result, it is possible that you could feel healthy but pass the virus on to 2–3 people within a week. Those individuals could then each pass the virus on to a further 2–3 people, and those in turn could then pass the virus on to another 2–3 people. Two will become 4, 4 will become 8, 8 will become 16, 16 will become 32, and so on, and the number of infected people will keep doubling. Unless contact between people decreases, it is estimated that about 850,000 people will become seriously ill in Japan and about 420,000 people will die. However, if everybody stops going out and stays at home, and if we are able to reduce our contact with people by 80%, we will be able to prevent the spread of infection. For example, stop meeting with your friends, stop going shopping, and work from home. If we can reduce the number of people infected, we can reduce the burden on doctors and nurses and prevent hospitals being overwhelmed.”

Please avoid leaving your house as much as possible. Staying at home can save lives and prevent the spread of infection.

Intervention: The message from a physician

The following is a message from an emergency medical care doctor.

“The beds and intensive care units at my hospital have all been filled by patients who have the novel coronavirus, and we can no longer accept new patients. The overwhelming of hospitals and collapse of the healthcare system that happened in Italy and New York is already under way in Japan. Doctors and nurses are being fully mobilized for treatment, but they lack masks and protective clothing. We have cut plastic folders with scissors to make face shields to cover our faces. We use the same mask for 3 days. With the high risk of infection, we are being pushed to the limit. It is not uncommon for infection to occur within the hospital. Even if only one of the doctors or nurses gets infected, many co-workers have to isolate themselves at home and are unable to continue providing treatment. This means that, if any one of you becomes infected and their condition becomes critical, there may be no treatment available. We are staying in the hospitals and continuing to provide treatment. So please, stay at home. If you do your part, we will be able to do ours.”

Please avoid leaving your house as much as possible. Staying at home can save lives and prevent the spread of infection.

Intervention: The message from a patient

The following is a message from a patient who is infected with the novel coronavirus.

“I had a 40-degree fever and a headache that felt like someone was stomping on my head. I could not stop coughing, and the pain felt as though I was inhaling broken glass. I really thought that I was going to die. I have no pre-existing conditions, do not smoke, and was perfectly healthy, but now I cannot breathe without a breathing tube. I have a drip and a catheter stuck into both of my hands. Right now, I feel ten times better than I did when I was at my worst, and I am able to talk about my condition. But my fever refused to go down even after I had taken medication, and I do not know how many days have passed since I was hospitalized. I do not know where I was infected. I do not know the route of infection, whether it was my workplace, somewhere I had visited for work, or when I was out shopping. Afterward, the rest of my family also tested positive. I had passed it to them. You do not know where you can be infected. Do not assume that you will be okay because you are young or healthy. The virus does not pick and choose. Please stop going out. Stay at home.”

Please avoid leaving your house as much as possible. Staying at home can save lives and prevent the spread of infection.

Intervention: The message from a resident

The following is a message from an individual who lives in an area where an outbreak of novel coronavirus has occurred.

“In the beginning, I did not really feel a sense of crisis. Of course I thought ‘Coronavirus is scary; better be careful,’ but nothing more. However, in the area where I live, the number of those infected has increased tenfold from 1500 to 15,000 in just one week. It is a real outbreak. The number of infected people increased all at once and overwhelmed the hospitals. They are lacking beds and ventilators. Some doctors and nurses are infected, and there are not enough hospital staff. Because of the healthcare system collapse, even if you are infected with coronavirus you will be unable to receive a test or treatment. If I or my family are infected and our condition becomes critical, we will likely die. I am scared to go grocery shopping, I always disinfect my purchases with alcohol, but soon my alcohol will run out. If you continue to go out, the number of those infected could jump to the tens of thousands, and the situation in your area will be the same as it is here. Please stop going out. Stay at home.”

Please avoid leaving your house as much as possible. Staying at home can save lives and prevent the spread of infection.

A control message

According to the traditional definition, grinding one’s teeth is when somebody makes a sound by strongly grinding the teeth together, usually unconsciously or while asleep. Nowadays, it is often referred to as ‘teeth grinding,’ a term which also covers various actions that we do while awake.

Whether you are sleeping or awake, the non-functional biting habit of grinding one’s teeth dynamically or statically, or clenching one’s teeth, can also be referred to as bruxism (sleep bruxism if it occurs at night). Bruxism can be categorized into the movements of: sliding the upper and lower teeth together like mortar and pestle (grinding); firmly and statically engaging the upper and lower teeth (clenching); and dynamically bringing the upper and lower teeth together with a tap (lapping).

Bruxism is difficult to diagnose, as it often has no noticeable symptoms. Stress and dentition are thought to be causes of bruxism, but it is currently unclear and future research is anticipated.

Split therapy, which involves the use of a mouthpiece as an artificial plastic covering on one’s teeth, and cognitive behavioral therapy are being researched as treatments for bruxism.

Appendix B.

Questions

| Intention to stay at home (Cronbach’s α 0.863) |
|-----------------------------------------------|
| (1) Would you like to cancel or postpone plans such as “meeting people,” “eating out,” and “attending events” because of the new coronavirus infection? |
| (2) Would you like to reduce the time you spend shopping in stores outside your home because of the new coronavirus infection? |
| (3) Would you like to avoid crowded spaces because of the new coronavirus infection? |

Perceived severity (Cronbach’s α 0.480)

| (1) How serious do you think your health will be if you are infected with the new coronavirus? |
| (2) How serious do you think the social situation will be if the new coronavirus spreads? |

Perceived vulnerability (Cronbach’s α 0.875)

| (1) How likely are you to be infected with the new coronavirus? |
(2) How likely are you to be infected with the new coronavirus when compared with someone of the same sex and age as you?

Perceived response efficacy (Cronbach’s α = 0.921)

(1) Do you think that you can save your life from the new coronavirus infection and prevent the spread of infection . . . by canceling or postponing your appointments such as “meeting people,” “eating out,” and “attending events”?

(2) . . . by reducing the time you spend shopping at stores outside your home?

(3) . . . by avoiding crowded spaces?

Perceived self-efficacy (Cronbach’s α = 0.853)

(1) Do you think that you can cancel or postpone your appointments such as “meeting people,” “eating out,” and “attending events” because of the new coronavirus infection?

(2) Do you think you can reduce the time you spend shopping in stores outside your home because of the new coronavirus infection?

(3) Do you think you can avoid the crowded spaces because of the new coronavirus infection?

All questions above were on a scale of 1–6, ranging from “extremely unlikely” to “unlikely,” “a little unlikely,” “a little likely,” “likely,” and “extremely likely.”

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