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## Self-Persuasion Increases Motivation for Social Isolation During the COVID-19 Pandemic Through Moral Obligation

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**Supplementary Materials:** Data, Materials [see Index of Supplementary Materials]



### Abstract

During the COVID-19 pandemic, governments use direct persuasion to encourage social isolation. Since self-persuasion is a more effective method of encouraging behavioural changes, using an experimental approach, we compared direct persuasion to self-persuasion on underlying motivations for voluntary social isolation during the COVID-19 pandemic. We asked the participants (N = 375) to write three arguments in support of social isolation (self-persuasion condition) or to evaluate three government graphics containing arguments for social isolation (direct persuasion condition). Then we asked the participants to evaluate perceived own vulnerability to COVID-19, the perceived severity of COVID-19, moral obligation to socially isolate and the attitude toward social isolation. Self-persuasion had a significant impact on the moral obligation to socially isolate, and through it on self-isolation intention. We also found evidence that individuals who perceived greater benefits from social isolation and who perceived a higher severity of COVID-19 have a higher intention to socially isolate. Significant sex and age differences



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also emerged. Our findings provide new insights into mechanisms of self-persuasion and underlying motivations that influence social isolation during the COVID-19 pandemic.

## Keywords

self-persuasion, motivation, social isolation, moral obligation, COVID-19, pandemic

### Highlights

- Limiting social contact may significantly contribute to the reduction of the effects of the COVID-19 pandemic.
- By means of an experimental study we found that self-persuasion compared to direct-persuasion had a significant impact on the moral obligation to socially isolate, and through it on self-isolation intention.
- We also found that a more positive attitude toward isolation and perceiving high severity of COVID-19 are strongly related to self-isolation intention.
- We advanced understanding of the relationship between self-persuasion and motivational factors, which can help to effectively encourage people to socially isolate during the COVID-19 pandemic.

The most pessimistic estimates suggest that anywhere between 60% and 80% of the population might have eventually fallen ill with the Coronavirus disease (COVID-19) (Ferguson et al., 2020). This will lead to a public health crisis. Public health experts claim that individual behaviours might have been the most effective way of controlling the spread of COVID-19 (Anderson et al., 2020). These behaviours include wearing protective masks, eye protection, social distancing, and self-isolation at even the slightest suspicion of being sick (Chu et al., 2020). Targeted social isolation for older adults could have been the most effective way to reduce morbidity and concomitant mortality of COVID-19 (Anderson et al., 2020). Furthermore, limiting social interaction and reducing proximity between non-senior citizens might have significantly contributed to the reduction of the effects of the COVID-19 pandemic (Lewnard & Lo, 2020). That is why the failure to limit social contacts at the beginning of the pandemic in northern Italy contributed to the rapid spread of the coronavirus and the death of thousands of people (Rettner, 2020). Therefore, it is essential to identify the psychological factors that allow us to explain and predict people's motivation to voluntarily pursue social isolation.

## Self-Persuasion

During the COVID-19 pandemic, individuals were encouraged by their governments to adopt social isolation to combat the spread of the disease (Remuzzi & Remuzzi, 2020). Self-isolation during the COVID-19 pandemic has been the effect of both voluntary and government-enforced behavioural change (Farooq et al., 2020). Different governments

have been using various strategies to encourage social isolation, e.g., by using persuasive communications. For example, the Polish Ministry of Health created direct persuasive messages distributed on social media. In this type of direct persuasion, citizens have been told directly what they should or should not do. However, direct persuasion is only capable of causing a short-term attitude change (Aronson, 1999). What is more, it could even lead to a boomerang effect because it tends to trigger the message recipients' psychological reactance (Grandpre et al., 2003). That kind of opposite effect of persuasion takes place, for example, when individuals exposed to such messages become less likely to perform behaviours such as healthy eating (Schwartz et al., 2007) or self-administered routine breast cancer exams (Kline & Mattson, 2000).

Compared to direct techniques of persuasion, self-persuasion, which is the process of generating one's own arguments to change behaviour, is more persuasive, more tailored, and provides more long-lasting effects (Aronson, 1999; Greenwald & Albert, 1968). The effectiveness of self-persuasion is primarily based on the fact that people are convinced that the motivation for behavioural change comes from within, as opposed to direct persuasion, where people are aware of the fact that someone is trying to affect them (Aronson, 1999). In self-persuasion situations, the arguments are generated and received by the same person, which minimizes the risk of psychological reactance (Mussweiler & Neumann, 2000; Wilson & Brekke, 1994). Such persuasion is typically conducted by encouraging individuals to create their persuasive arguments on a given issue and then to publicly share those arguments. The resulting change in attitudes can be explained by cognitive dissonance theory (Festinger, 1957). If people generate arguments that contradict their attitudes, they experience cognitive dissonance (an unpleasant psychological state) and tend to later realign their attitudes with these arguments to reduce the dissonance by seeking consistency in their cognitions. A considerable body of research has shown that self-persuasion leads to improvements in many health-related behaviours, including limiting alcohol consumption (Loman et al., 2018b), and increasing healthy eating intention (Li, van Halen, van Baaren, & Müller, 2020).

## Moral Obligation Toward Ethical Behaviour

Social isolation during a pandemic differs from typical health-related behaviours, as it is not only aimed at protecting one's own health, but also the health of others. Since people who are infected with the virus may infect other people who might – in extreme situations – die as a result, measures to reduce this risk, such as social isolation, are characterized by a moral responsibility for other people. This is why we believe that social isolation during a pandemic has the characteristics of moral behaviour. Incorporating moral obligation into the model would contribute to better understanding the underlying motivations for social isolation. Moral obligation is defined as one's own socially determined and validated values attached to a particular behaviour (Manstead, 2000). Moral obligation works in parallel with attitudes on intention (Conner & Armitage, 1998). Beck

and Ajzen (1991) confirmed that perceived moral obligations improved the prediction of intention to behave ethically. Moreover, a recent study has shown that among other factors, moral alignment (the extent to which people believe that they should follow COVID-19 mitigation measures) is a significant predictor of compliance with measures of reducing the effects of COVID-19 (van Rooij et al., 2020).

Although self-persuasion was shown to be more effective than direct persuasion in changing attitudes (Aronson, 1999), intentions (e.g., Li, van Halen, van Baaren, & Müller, 2020) or behaviours (e.g., Müller et al., 2009), its influence on moral obligations remains unclear. Previous studies demonstrated that attempts to encourage moral behaviours through external rewards can lead to reducing the chance of further moral behaviours (e.g., Fabes et al., 1989; Kunda & Schwartz, 1983). Therefore, it is reasonable to expect that external persuasion, compared to self-persuasion, may also lead to a lesser moral commitment to moral behaviour in the future. Moral behaviours are also positively influenced by the sense of autonomy (Gagné, 2003; Ntoumanis & Standage, 2009; Wong et al., 2020). Since an individual has a stronger sense of autonomy in a self-persuasion condition compared to a direct persuasion condition (Aronson, 1999), persuasion can also influence the perceived moral obligation. It is legitimate then, to determine whether individuals will have a more positive attitude, feel a stronger moral obligation, and consequently be more motivated to socially isolate, if they formulate arguments in favour of social isolation on their own, as opposed to being exposed to the government's persuasive messages.

## Perceived Vulnerability and Severity of COVID-19

Previous works explaining human behaviour during epidemics showed that threat appraisal affects the intention to behave in line with the recommendations limiting the spread of disease (Bish & Michie, 2010). Threat appraisal refers to an individual's beliefs about vulnerability to an illness (perceived vulnerability), as well as an individual's beliefs about the seriousness of the situation (perceived severity) (Champion & Skinner, 2008). In general, the higher the perceived vulnerability to falling ill, and the higher the perceived severity of an illness, the higher people's motivation for healthy behaviour. Some recent studies confirmed that perceived vulnerability is a significant predictor of engaging in proactive and social distancing behaviours during the COVID-19 pandemic (Makhanova & Shepherd, 2020; van Rooij et al., 2020). However, other studies demonstrated that the perceived severity of COVID-19, not the perceived vulnerability, had a positive impact on social isolation intention (Callow et al., 2020; Farooq et al., 2020; Kaspar, 2020). Different studies demonstrated that neither perceived severity nor perceived vulnerability to COVID-19 was a significant predictor of health-related behaviours during the COVID-19 pandemic (Clark et al., 2020). Thus, there are mixed results when examining the impact of threat appraisal on social isolation intention.

We assumed that since people who have perceived both the severity of COVID-19 and their vulnerability to it as high have been more likely to remain socially isolated, the arguments concerning these issues may occur during self-persuasion for social isolation. Therefore, self-persuasion might have increased perceived severity and vulnerability to COVID-19 as a result of convincing oneself to socially isolate during the COVID-19 pandemic. This line of reasoning is supported by a study that showed that self-persuasion is effective in increasing alcohol risk perception (Loman et al., 2018b), which is similar to the perceived threat of illness.

## The Present Study

One of the greatest challenges in the fight against the COVID-19 pandemic has been to effectively increase the levels of social isolation practices. This endeavour has required more evidence-based guidelines on how to attract and motivate individuals in the most efficient and effective ways. Approaches that examine persuasive techniques in tandem with motivational factors could address these challenges. This study aims to explain and predict underlying motivations for voluntary social isolation during the COVID-19 pandemic. Building on recent studies our research empirically tested the effects of predictors of voluntary social isolation such as attitude, moral obligation, perceived vulnerability to COVID-19, and perceived severity of COVID-19. Most importantly, we experimentally tested how self-persuasion, compared to direct persuasion, affects intention to socially isolate during the COVID-19 pandemic through all the motivational components of the tested model. To date, no study has linked self-persuasion with moral obligation and no study has examined whether self-persuasion could be an effective tool for encouraging people to socially isolate during the COVID-19 pandemic. By contrasting self-persuasion with the ubiquitous direct persuasion used during the COVID-19 pandemic, we sought to explore differences in the effectiveness of those persuasive approaches, as well as the potential psychological mechanisms explaining the sources of those differences.

Starting from self-persuasion theory (Aronson, 1999), we hypothesized that self-persuasion (compared to direct persuasion), would have an indirect effect on a stronger intention toward social isolation during the COVID-19 pandemic through a more positive attitude, stronger moral obligation toward social isolation, higher perceived vulnerability to COVID-19, and perceived severity of COVID-19.

## Method

### Participants

To recruit participants, we disseminated a survey link on Facebook groups, asked colleagues to help disseminate the link online within their social networks and finally, we bought an advertisement on Facebook. The study was realized in the second half of

August 2020 in Poland. As an additional incentive to take part in the study, a raffle was held. One random participant, who decided to take part in the raffle by providing their email address, received 200PLN. People who were willing to participate were able to directly enter the study page by clicking a link (467 unique visits to the site). In the end, 375 participants took part in the experiment, of which 5 participants were excluded because they marked the same number (four people) for all the questions or gave an unbelievable age (one person who also marked the same answers to almost all questions). The collected data is available at the Open Science Framework (see [Supplementary Materials](#)). A description of the demographic features of the sample is provided in Table 1.

**Table 1***Descriptive Information of Survey Respondents*

Descriptive variable	<i>n</i>	%
<b>Demographics</b>		
<b>Age (<i>M</i> = 40.22; <i>SD</i> = 14,54)</b>		
18-29	96	25,9
30-39	106	28,7
40-49	69	18,6
50-59	52	14,1
60-69	33	8,9
70-79	14	3,8
80+	0	0
<b>Sex</b>		
Male	138	37,6
Female	229	62,4
<b>Education</b>		
Occupational	19	5,1
Middle	86	23,2
Higher (incomplete)	40	10,8
Higher	225	60,8
<b>Have you gotten sick with COVID-19?</b>		
No	183	49,5
Yes	7	1,9
I don't know	180	48,6
<b>Do you personally know someone who has gotten sick with COVID-19?</b>		
No	221	59,7
Yes	115	31,1
I don't know	34	9,2
<b>Have you been under quarantine because of COVID-19?</b>		
No	345	9,2
Yes	25	6,8

Note. Total sample (*N* = 370).

## Procedure

A between-participants design was used, with persuasion as a factor (self-persuasion vs. direct persuasion), and social isolation intention as the dependent variable.

In the welcoming message, the participants were presented with a set of information concerning the study. First of all, the participants were presented with the aim of the study, which was to understand what motivates people to socially isolate during the COVID-19 pandemic. Next, all the rights of the participants were explained. In both questionnaires, the participants were provided with the definition of social isolation. Each participant was randomly assigned to either the direct persuasion condition ( $N = 182$ ) or the self-persuasion condition ( $N = 193$ ). The groups differed in the task given to the participants. In the direct persuasion condition, the participants were presented with a set of three graphics created by the Polish Ministry of Health that encouraged social isolation. The participants were asked to evaluate the visuals, and the contents of the image, with particular attention to the persuasive effectiveness of the message. In the self-persuasion condition, participants were asked to present three (or more) arguments as to why social isolation is a worthy undertaking, and why it might be beneficial to them. The self-persuasion procedure was designed based on the methodology used successfully in previous studies using the method of generating own arguments for a specific position (e.g., Li, van Halen, van Baaren, & Müller, 2020). Both conditions were designed in such a way that the participants were similarly involved in performing the tasks. The instructions and materials used in the study are provided in the [Supplementary Materials](#).

## Measures

After the persuasion procedure, the study participants answered questions from the following scales<sup>1</sup>.

### Severity of COVID-19

Self-perceived danger and severity in the situation of getting sick with COVID-19 was assessed with the following items: “I think that COVID-19 is a severe and dangerous sickness”, “If I ever got sick with COVID-19, it could be dangerous to my life”, and “If I ever got sick with COVID-19, the course of this disease could be severe”. The items were rated on a 7-point scale from 1 = “completely disagree” to 7 = “completely agree” ( $\alpha = .93$ ).

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1) The study also included the measurement of social norms and perceived behavioural control. Unfortunately, due to problems with reliability and validity of scales, they were not included in this article.

### Vulnerability to COVID-19

Self-perceived possibility of contracting COVID-19 or meeting someone who is sick with it was assessed with the following items: “It is very likely, that I’ll get sick with COVID-19 in the next 30 days”, “It is very likely, that I’ll meet someone sick with COVID-19 in the next 30 days”, and “The risk, that I’ll get sick with COVID-19 in the next 30 days is minuscule”. The items were rated on a 7-point scale from 1 = “completely disagree” to 7 = “completely agree” ( $\alpha = .79$ ).

### Moral Obligation

Beliefs about one's own moral responsibility for social isolation during the COVID-19 pandemic were assessed with three items (for instance: “I feel personally accountable for reducing the risk of infecting others during the COVID-19 pandemic”) rated on a 7-point scale from 1 = “completely disagree” to 7 = “completely agree” ( $\alpha = .95$ ).

### Attitude

Beliefs about likely consequences of isolation during the COVID-19 pandemic were assessed with three 7-point bipolar evaluative adjective scales: “stupid - wise”, “unpleasant - pleasant”, and “harmful - beneficial” ( $\alpha = .84$ ).

### Social Isolation Intention

The intention to self-isolate during the COVID-19 pandemic in the next 30 days was assessed with three items (for instance: “In the next 30 days, I intend to refrain from attending any social and family gatherings with people I don’t see on a daily basis”), each concerning different aspects of social isolation (not meetings with others; reducing going out to public places; going out only when necessary, or to places where no other people are present), rated on a 7-point scale from 1 = “completely disagree” to 7 = “completely agree” ( $\alpha = .92$ ).

Besides the above-mentioned scales, the participants were asked a series of standard demographic questions as well as three questions concerning exposure to COVID-19 (i.e., “Were you quarantined on the suspicion of being sick with COVID-19?”; “Were/Are you sick with COVID-19?”; “Do you know anyone who was/is sick with COVID-19?”).

## Results

The analysis was carried out in SPSS 26 (IBM Corp.). The K-S test indicated that all continuous variables were not normally distributed ( $p < .001$ ), which led us to use non-parametric statistical tests. Correlations between the variables were measured using Spearman's *rho* (see Table 2). For non-normally distributed data the bootstrap confidence interval analysis is recommended (Hayes & Scharkow, 2013). The tolerance



(range: .31–.97) and variance inflation factor (range: 1.04–3.194) values for all predictors were within acceptable ranges (Menard, 1995; Myers, 1990), indicating a lack of multicollinearity.

**Table 2**

*Descriptive Statistics and Spearman Correlations Between Variables*

Variable	1	2	3	4	5	6	7
1. Intention	–						
2. Attitude	.81***	–					
3. Moral obligation	.79***	.77***	–				
4. Severity	.69***	.66***	.70***	–			
5. Vulnerability	.36***	.36***	.45***	.50***	–		
6. Age	-.11*	-.19***	-.13*	.00	-.04	–	
7. Sex	-.13*	-.22***	-.14**	-.18**	-.11*	.09	–
8. Self-persuasion	.10	.11*	.13*	.00	.08	-.07	-.03
<i>M</i>	3.33	3.59	4.02	3.92	3.57	40.22	–
<i>SD</i>	2.03	1.81	2.11	1.87	1.56	14.54	–

*Note.* Sex was dummy coded such that 0 = female and 1 = male; Self-persuasion coded as 0 = direct persuasion and 1 = self-persuasion.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

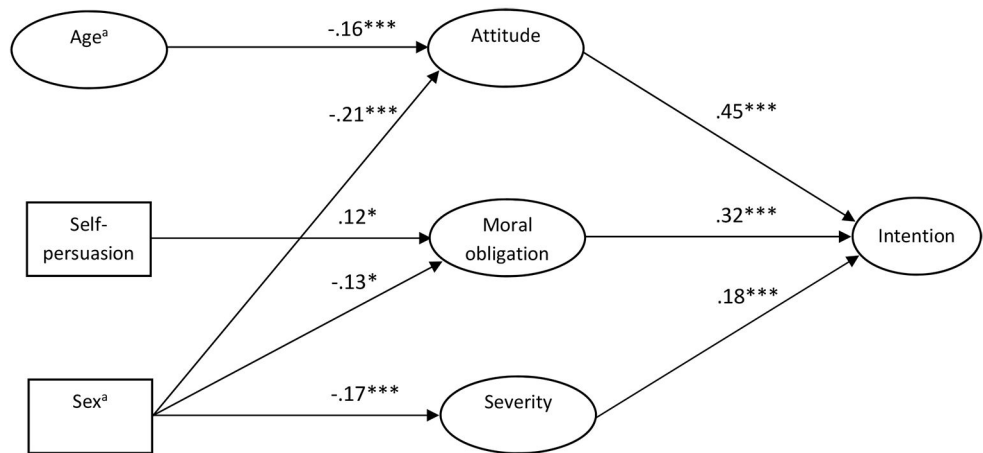
We conducted a mediation analysis using the PROCESS (Hayes & Scharkow, 2013; Model 4) macro for SPSS. To yield standardized coefficients, all variables were converted to z-scores prior to analysis (see Figure 1). We entered attitude, moral obligation, severity, and vulnerability as potential mediators, and intention to socially isolate during the COVID-19 pandemic as the dependent variable. Bootstrapping techniques were used to test for the direct effect of self-persuasion manipulation on intention, and for indirect effects of this relationship through attitude, moral obligation, severity, and vulnerability. We included sex and age as covariates in the tested model.

The examined model accounted for 71% of the variance in the social isolation intention,  $F(7, 359) = 130.21$ ,  $p < .001$ . The results of the analyses showed that self-persuasion manipulation predicts moral obligation,  $\beta = .12$ ,  $SE = .05$ , 95% CI [.02, .22], but does not predict attitude,  $\beta = .08$ ,  $SE = .05$ , 95% CI [-.02, .18], severity,  $\beta = .00$ ,  $SE = .05$ , 95% CI [-.10, .10], and vulnerability,  $\beta = .07$ ,  $SE = .05$ , 95% CI [-.03, .17]. Self-persuasion manipulation also did not directly predict intention,  $\beta = .01$ ,  $SE = .03$ , 95% CI [-.05, .07]. Total effect of self-persuasion on intention was non-significant,  $\beta = .08$ ,  $SE = .05$ , 95% CI [-.02, .19]. However, there was a significant indirect effect of self-persuasion on intention through moral obligation,  $\beta = .04$ ,  $SE = .02$ , 95% CI [.01, .08]. According to Hayes (2009) there is no need for total effect to be present for the mediation to be significant, as he claims that using the lack of total effect as the cut-off line might lead to omission of some potentially

interesting connections between the variables that are not visible at first glance. Self-persuasion manipulation did not indirectly affect intention via attitude,  $\beta = -.04$ ,  $SE = .02$ , 95% CI [-.01, .08], severity,  $\beta = .00$ ,  $SE = .01$ , 95% CI [-.02, .02], and vulnerability,  $\beta = -.003$ ,  $SE = -.01$ , 95% CI [-.01, .002]. We also found that the direct predictors of intention were attitude,  $\beta = .46$ ,  $SE = .05$ , 95% CI [.36, .55], moral obligation,  $\beta = .32$ ,  $SE = .05$ , 95% CI [.22, .42], and severity,  $\beta = .18$ ,  $SE = .04$ , 95% CI [.10, .27]. Vulnerability did not directly predict intention,  $\beta = -.04$ ,  $SE = .03$ , 95% CI [-.11, .02].

**Figure 1**

*Proposed Mediation Models*



*Note.* Contains only significant paths.

<sup>a</sup>Age and Sex were introduced into the model as covariants.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

Analyses of covariance showed that sex was a significant predictor of attitude,  $\beta = -.20$ ,  $SE = .05$ , 95% CI [-.30, -.11], moral obligation,  $\beta = -.13$ ,  $SE = .05$ , 95% CI [-.23, -.03], and severity,  $\beta = -.17$ ,  $SE = .05$ , 95% CI [-.28, -.07], but it did not predict intention,  $\beta = .00$ ,  $SE = .01$ , 95% CI [-.02, .02], and vulnerability,  $\beta = -.09$ ,  $SE = .05$ , 95% CI [-.20, .01]. In turn, age was a significant predictor of attitude,  $\beta = -.16$ ,  $SE = .05$ , 95% CI [-.26, -.06], but it did not predict intention,  $\beta = .00$ ,  $SE = .01$ , 95% CI [-.02, .02], moral obligation,  $\beta = -.09$ ,  $SE = .05$ , 95% CI [-.19, .01], severity,  $\beta = .05$ ,  $SE = .05$ , 95% CI [-.05, .15], and vulnerability,  $\beta = -.01$ ,  $SE = .05$ , 95% CI [-.12, .09].

Besides the examined model, to further explore the collected results, we have carried out a series of the Mann-Whitney U tests (with two-tailed Monte Carlo set to 10000 samples), in which we closely examined the impact of sex, being sick with COVID-19, being quarantined, and knowing someone who was sick with COVID-19 on dependent

variables. The test showed that there were significant sex differences in the case of intention,  $z = -2.51$ ,  $p = .01$ ; attitude,  $z = -4.12$ ,  $p < .001$ ; moral obligation,  $z = -2.75$ ,  $p = .006$ ; severity,  $z = -3.42$ ,  $p < .001$ ; and vulnerability,  $z = -2.10$ ,  $p = .036$ . Women compared to men ( $w$  – women;  $m$  – men) had a higher intention to socially isolate ( $M_w = 3.54$ ,  $SD_w = 1.96$  vs.  $M_m = 3.01$ ,  $SD_m = 2.12$ ), had a more positive attitude towards social isolation ( $M_w = 3.92$ ,  $SD_w = 1.67$  vs.  $M_m = 2.08$ ,  $SD_m = 1.91$ ), felt more morally obligated to socially isolate ( $M_w = 4.27$ ,  $SD_w = 2.01$  vs.  $M_m = 3.63$ ,  $SD_m = 2.21$ ), and perceived higher severity of ( $M_w = 4.18$ ,  $SD_w = 1.87$  vs.  $M_m = 2.53$ ,  $SD_m = 1.80$ ) as well as vulnerability to ( $M_w = 3.70$ ,  $SD_w = 1.52$  vs.  $M_m = 3.39$ ,  $SD_m = 1.61$ ) COVID-19. The Mann-Whitney U was not significant for any variable in the case of being sick with COVID-19, and in the case of being quarantined, although it was significant when we accounted for knowing someone who was sick with COVID-19 for severity,  $z = -2.95$ ,  $p = .003$ , vulnerability,  $z = -4.09$ ,  $p < .001$ , moral obligations,  $z = -2.74$ ,  $p = .006$ , and isolation intention,  $z = -3.64$ ,  $p < .001$ . People who knew someone sick with COVID-19 ( $k$  – knew;  $d$  – did not know) were more likely to self-isolate ( $M_d = 2.99$ ,  $SD_d = 1.98$ ,  $M_k = 3.83$ ,  $SD_k = 1.92$ ), perceived greater severity of COVID-19 ( $M_d = 3.71$ ,  $SD_d = 1.87$ ,  $M_k = 4.35$ ,  $SD_k = 1.82$ ), perceived higher vulnerability ( $M_d = 3.31$ ,  $SD_d = 1.51$ ,  $M_k = 4.05$ ,  $SD_k = 1.55$ ), and felt more morally obligated to self-isolate ( $M_d = 3.78$ ,  $SD_d = 2.14$ ,  $M_k = 4.47$ ,  $SD_k = 1.97$ ).

## Discussion

In order to mitigate the effects of the COVID-19 pandemic, healthy people must abide by a set of behaviours, such as washing their hands more often, wearing a protective mask, or socially isolating. Those simple behavioural changes, if undertaken by the majority of society, can protect the lives of thousands of people. Thus governments are trying to encourage people to engage in such behaviours as social isolation. However, there is not enough research to infer what kind of methods of persuasion would actually be effective in achieving this goal.

The current study investigated the impact of self-persuasion on the declared intention to voluntarily self-isolate during the COVID-19 pandemic. Grounded in the self-persuasion paradigm (Aronson, 1999), we designed a brief online intervention in order to increase the intention of individuals to socially isolate. The effects of this intervention were compared to the effects of direct-persuasive images created by the Polish Ministry of Health, which is an ecologically valid comparative context. We discovered a pattern of distinct motivations for study participants who created their own arguments for social isolation versus those who read direct persuasive messages. Compared to participants being the targets of direct persuasion, participants writing arguments towards social isolation were more morally obligated to socially isolate during the COVID-19 pandemic. In turn, people with a high sense of moral obligation to socially isolate declared a stronger intention to socially isolate during a pandemic. We also found evidence that

people who perceived greater benefits from social isolation and who perceived higher severity of COVID-19 have a higher intention to socially isolate.

Social isolation or lack thereof is of particular importance in the time of a pandemic, such as the one we are experiencing right now, as it might lead to numerous moral consequences. Indeed, not socially isolating might have tragic consequences, especially for the elderly and the sick. Therefore, by feeling morally responsible for the potential harm done by not abiding by this simple guideline, people might socially isolate more often. This is consistent with our findings – participants with a high sense of moral obligation to socially isolate declared a stronger intention to socially isolate during the COVID-19 pandemic. Importantly, as compared to the individuals who were influenced by direct persuasion, those who were self-persuaded felt a stronger moral obligation to voluntarily socially isolate, which in turn enhanced their intention to socially isolate. Thus proving that even though there is no direct effect between self-persuasion and intention to socially isolate, self-persuasion influences intention through moral obligations. Consequently, people may self-persuade towards social isolation by creating arguments in favour of protecting other people from COVID-19, which might be an effective method of changing their behaviour.

The theoretical innovation of our research lies in the fact that our results proved that self-persuasion can increase the level of perceived moral obligation toward a specific behaviour. To the best of our knowledge, this relationship has not been demonstrated in any prior research. Thus, the results from this study add to the self-persuasion literature. We argue that the effect of self-persuasion on moral obligations is mainly due to the fact that people react with resistance to the attempts of external encouragement to behave morally (Fabes et al., 1989; Kunda & Schwartz, 1983; Upton, 1974). On the contrary, a sense of autonomy positively affected moral behaviours (Deci & Ryan, 2008; Gagné, 2003; Ntoumanis & Standage, 2009; Wong et al., 2020).

Contrary to our assumptions, self-persuasion, compared to direct persuasion, did not directly improve the attitude towards social isolation, perceived severity and vulnerability to COVID-19, and the intention to isolate during the COVID-19 pandemic. Due to the nature of these comparisons, the results do not mean that self-persuasion is ineffective in influencing these motivational components of social isolation. This only means that it is as effective as direct persuasion. It is possible that the direct persuasion used by us in the study was very effective, equally to self-persuasion. Even though the relative effectiveness of self-persuasion versus direct persuasion can be derived from the current study, it would be interesting in future studies to examine self-persuasion compared to no persuasion, to assess the absolute power of self-persuasion. It is also possible that the attitudes and beliefs towards social isolation during the COVID-19 pandemic and pandemics in general during the five months of its duration (between March and August 2020) were so strongly developed that they are hardly susceptible to change. Moreover, the attitude towards COVID-19 is connected with more general attitudes towards the

government, politics, and strongly related to conspiracy theories related to it (Oleksy et al., 2021; Pennycook, McPhetres, Bago, & Rand, 2020), which may also hinder its change.

Our findings corroborate prior research suggesting that the perceived severity of COVID-19, not the perceived vulnerability, had a positive impact on the social isolation intention (Callow, Callow, & Smith, 2020; Farooq et al., 2020; Kaspar, 2020). It suggests that intervention strategies motivating people to socially isolate during the COVID-19 pandemic should focus on stressing the severity of COVID-19 but not on emphasizing that everybody is vulnerable to the disease, which can be a useful recommendation for frontline practitioners. Moreover, our findings suggest that interventions (aiming to increase the intention of social isolation during the time of a pandemic), other than self-persuasion, may simply be an attempt to convince people that COVID-19 is a severe and potentially dangerous disease. Asking people to point out specific arguments in favour of high severity of COVID-19, and as such to self-persuade, might also increase the perceived severity of COVID-19, and, consequently, might lead to greater social isolation intention.

Demographic variables introduced as covariates have proved to play a significant role in our model. In line with previous studies, we found that women have a higher intention to socially isolate during the COVID-19 pandemic (Clark et al., 2020; Everett et al., 2020), and have a more positive attitude towards doing it (van Baal & Hohwy, 2020). Furthermore, in accordance with the results of recent studies, women not only perceived COVID-19 as a more severe disease (Li, Yang, Dou, Wang, Zhang, & Lin, 2020) but also believed that they are more vulnerable to it (Makhanova & Shepherd, 2020). We have also identified previously unexplored relationships, i.e., women compared to men feel more morally responsible to socially isolate. Men had a more negative attitude toward social isolation, did not feel such a strong moral obligation to socially isolate and did not perceive COVID-19 as such a threat as women did. Therefore, they did not express a strong intention to socially isolate. As social isolation leads to a significant reduction of the risk of getting infected and contributes to limiting the effects of the COVID-19 pandemic (Anderson et al., 2020), it seems important in future studies to empirically validate persuasive tools that might encourage social isolation among men.

In contrast to previous research results (van Baal & Hohwy, 2020), we discovered that older people have a more negative attitude towards social isolation during a pandemic. This is a surprising and worrying result, especially as older people are particularly vulnerable to the negative health consequences of COVID-19 (Oxford COVID-19 Evidence Service, 2020). From this perspective, it may be surprising that in our study older people did not perceive greater susceptibility to the disease or severity of the disease in comparison to younger people, as observed in other studies (e.g., Li, Yang, Dou, Wang, Zhang, & Lin, 2020; Makhanova & Shepherd, 2020). The results may have been influenced by the way the respondents were recruited through Facebook advertising. Perhaps older people with a clearly negative attitude towards COVID-19 were more likely to take part

in the study to have a chance to express their opinions. In younger people, the clarity of attitudes may have had less influence on the decision to participate in the study. Further research, using other recruitment methods, should investigate the relationship between age and attitudes towards social isolation in Poland.

Moreover, we extended prior studies (e.g., Callow, Callow, & Smith, 2020; Farooq, Laato, & Islam, 2020; Makhanova & Shepherd, 2020; van Rooij et al., 2020) by finding that people who knew someone sick with COVID-19 were more likely to self-isolate, perceived greater severity of COVID-19, higher vulnerability to COVID-19, and felt more morally obligated to self-isolation. On one hand, this exploratory finding gives novel insights for understanding underlying motivations for compliance with safety rules during a pandemic. On the other hand, this result suggests that if someone does not know anyone who is suffering from COVID-19, they may not take the measures to protect against the disease and limit the pandemic, such as social isolation. Moreover, these results suggest that as the number of cases increases during a growing pandemic, the sick person's relatives and acquaintances will be more motivated to social isolation, feeling a greater moral responsibility for their behaviour and recognizing the severity of the disease.

Several study limitations require consideration. First, the participants of our study were Facebook users, which may limit the generalizability of obtained results to the specificity of the studied group. Our sample was recruited through social media, which could have affected its bias, e.g., the population we sampled mainly completed higher education. Further studies might test if the same model holds for populations with a dominance of people with lower education. Second, all variables were measured with the use of relatively short scales (three items). Third, this study did not measure actual self-isolation behaviour, but the declared intention to engage in social isolation in the future was measured. Although it is worth noting that prior research (Randall & Wolff, 1994) strongly indicates that the intention of a given behaviour is a significant predictor of actual future behaviour. Therefore, prospective studies should also incorporate measures of actual behaviour. Finally, it would be worth examining whether the pattern of results obtained in our studies can be replicated in different cultures and contexts.

The results have both theoretical and practical implications. From the theoretical perspective, it is the first study introducing moral obligation as a potential mediator between self-persuasion and specific behaviour intention. Thus, this result expands the range of mediators used in prior studies explaining the link between self-persuasion and behaviour by a new mediator, i.e., moral obligation. Looking deeper into the theoretical mechanisms of the observed relationships, it can be assumed that some of the individuals assigned to the self-persuasion condition (creating arguments in favour of social isolation) have experienced cognitive dissonance as they might have expressed opinions partially contrary to their own beliefs. This unpleasant feeling of dissonance may be reduced by taking moral responsibility for social isolation and, consequently,

by having a stronger intention toward social isolation. Therefore, our study adds to the cognitive dissonance theory (Festinger, 1957), as it suggests that moral obligation may be one of the processes activated during the reduction of cognitive dissonance related with moral behaviour. On the other hand, our study indirectly supported the proposition of the autonomic nature of motivation to undertake moral behaviour (e.g., Deci & Ryan, 2008; Gagné, 2003) (such as social isolation during a pandemic) and as such, it adds to the literature that moral behaviour can be fostered more effectively by self-persuasion than by direct persuasion. Our results also suggest that direct persuasion used in this study leads to a boomerang effect because it tends to trigger the message recipients' psychological reactance (Grandpre et al., 2003).

Practically, given the individual and collective benefits of social isolation during the COVID-19 pandemic, the present findings offer an insight into the mechanisms underlying the techniques that might persuade citizens to self-isolate. Our results confirmed the effectiveness of self-persuasion in affecting an important predictor of social isolation, i.e., moral obligation toward social isolation. This suggests that practitioners can encourage people to reflect on the moral aspect of social isolation, on the protection of loved ones, the elderly and the sick. Our results, combined with research showing that self-persuasion can be easily and effectively carried out through social media (Loman et al., 2018a) or by mobile applications (Stavrositu & Kim, 2018), indicate potential opportunities for encouraging people to stay isolated during a pandemic. In order to apply self-persuasion, there is no need to encourage people to create and write down their own arguments for social isolation, but it is enough to pose an open question (Loman et al., 2018b) such as this in the media space: "Why is it worth limiting social contact during the COVID-19 pandemic?". The results of our study also suggest that a possible way to encourage people to socially isolate may be to highlight the significance of the severity of the COVID-19 disease. Moreover, our research shows that men and older people are members of social groups that should be particularly encouraged to socially isolate during the COVID-19 pandemic, because of their more negative attitude towards social isolation, compared to women and younger people. Even though the observed effect size is small, the application of persuasion on the scale of the whole population may significantly contribute to a reduction of the effects of the COVID-19 pandemic and may potentially save the lives of dozens of people.

In sum, we advanced the understanding of the interplay between self-persuasion and motivational factors that gave rise to the desire to socially isolate during the COVID-19 pandemic. Our results have enhanced the existing knowledge of the relationship between self-persuasion and attitude, moral obligation, perceived vulnerability and severity of the illness and intention toward social isolation by indicating that self-persuasion compared to typical direct persuasion can affect declared intention toward social isolation through moral obligation. Our results provide insight into "why" people are motivated to socially isolate during the pandemic, and accordingly contributes to the scientific pursuit of

encouraging people to voluntarily self-isolate during the COVID-19 pandemic. Finally, our research has not only theoretical but also practical consequences, as knowing that self-persuasion can affect declared intention towards social isolation through moral obligation can help to effectively encourage people to socially isolate during the COVID-19 pandemic.

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**Data Availability:** For this article, a dataset is freely available (see Drążkowski, Trepanowski, Chwiłkowska, & Majewska, 2020a).

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## Supplementary Materials

The Supplementary Materials contain the instructions (in both English and Polish) for the self-persuasion and direct-persuasion conditions, as well as the main instruction describing what behaviours are considered as social isolation. Infographics used in the direct-persuasion condition are also included (for access see [Index of Supplementary Materials](#) below).

### Index of Supplementary Materials

Drążkowski, D., Trepanowski, R., Chwiłkowska, P., & Majewska, M. (2020a). *Supplementary materials to "Self-persuasion increases motivation for social isolation during the COVID-19 pandemic through moral obligation"* [Research data]. OSF. <https://osf.io/2g6r8>

Drążkowski, D., Trepanowski, R., Chwiłkowska, P., & Majewska, M. (2020b). *Supplementary materials to "Self-persuasion increases motivation for social isolation during the COVID-19 pandemic through moral obligation"* [Instructions and infographics]. PsychOpen. <https://doi.org/10.23668/psycharchives.4408>

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