The relationship of trust, loneliness and social support, and the attitudes towards COVID-19 public health measures

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Abstract

During the COVID-19 pandemic countries implemented public health measures aimed at minimizing social contact. Therefore, the measures have likely altered the quality and the frequency of social relationships, affecting both trust in people and institutions, as well as the sense of loneliness and social support. However, there were contrasting reactions to the implemented measures - some considered them too mild, some too harsh, and others appropriate. This study investigated how these groups of individuals differed in their trust in other people and institutions, as well as in their feeling of loneliness and social support. A Croatian sample of 2115 participants collected at the beginning of the pandemic was examined. The analyses suggested that people who considered measures too mild had lower trust in people, government, and healthcare system than the ones who considered them appropriate. People who considered measures too harsh had lower trust in government, WHO, and were lonelier than people who considered them appropriate. These findings help us elucidate the differences between people with distinct attitudes towards COVID-19 measures in terms of their relationship towards others and the institutions (i.e., trust), and their coping with the challenges of the pandemic (i.e., loneliness and social support).

Keywords: *attitudes towards COVID-19 public health measures; institutional trust; interpersonal trust; loneliness; social support*

Introduction

During the COVID-19 pandemic, public health measures were introduced to slow down the transmission of the virus. These measures strongly affected people's social lives, both in terms of intensity and quality. They reduced the number of social interactions, which likely increased loneliness (e.g., Bu et al., 2020)[1] and other negative mental health outcomes like depression and anxiety (Wu et al., 2021). Furthermore, by acting as a proxy for risk assessment, they might have also affected the quality of one's relationships, for instance, by making people more distrustful towards others (Fang et al., 2022; Lo Iacono et al., 2021)[2] or, differently, more trustful towards institutions they were hoping to keep them safe (Bol et al., 2021; Sibley et al., 2020).

However, not everyone experienced the restrictive measures in the same way – some people approved of them, and some were rather skeptical. It is viable to

[1] There are some studies that challenge this, e.g., Luchetti et al. (2020)

[2] However, see Esaiasson et al. (2021) for indications that interpersonal trust rose during the pandemic in Sweden.

assume that the subjective experience of measures is a better predictor of their impact on social life than their stringency *per se*. Therefore, this study investigated how the attitudes towards COVID-19 public health measures (ACPM) were related with loneliness and trust in people and institutions. Here, loneliness was conceptualized both as a subjective experience of feeling lonely (*loneliness* in the further text) and as a perception of a lack of social support. Previous research (e.g., Coyle & Dugan, 2012; Routasalo et al., 2006) showed that these two concepts, although somewhat similar, are empirically fairly distinguishable.

Regarding trust, a study conducted in Switzerland (Gilles et al., 2022) found that the perceived effectiveness of implemented measures was positively associated with the trust in medical/scientific institutions, but not with the trust in governmental or non-Swiss institutions (EU, foreign governments, WHO). An experimental study using samples from China and the USA (Yuan et al., 2022) discovered that institutional trust increased voluntary compliance, and that interpersonal trust increased willingness to reduce unnecessary outdoor activities (in Chinese part of the sample). Lastly, Rieger and Wang (2022) found that perceiving the government response as either too weak or too extreme was related with lower trust in government.

Studies investigating the relationship between loneliness and ACPM showed diverging results. For example, Rania and Coppola (2022) found that people who had more negative/opposing attitudes towards social distancing were lonelier. Similarly, Stickley et al. (2021) observed that lonelier people were less likely to engage in COVID-19 preventive behaviors. Finally, in a thought-provoking study, Paykani et al., (2020) found that perceived social support from family was related with more compliance, whereas perceived social support from friends was related with less compliance with measures (the latter was also supported by Hills & Eraso, 2021). One explanation for these diverging results may be that different groups that people rely on for support (e.g., family vs. friends) have divergent expectations from them (e.g., safety vs. fun), which in turn encourages conflicting behaviors.

The goal of this study was to investigate the relationship between ACPM, institutional and interpersonal trust, and loneliness and social support. To measure ACPM more specifically, a distinction between considering measures as appropriate, too harsh, and too mild was made. It was hypothesized that considering measures either too harsh or too mild (i.e., inappropriate) was associated with lower trust in government and medical institutions. Considering measures too mild was expected to be related to lower interpersonal and institutional trust. Finally, considering measures too harsh was hypothesized to be associated with higher loneliness and lower social support.

Method

Participants

A Croatian sample from the COVIDiSTRESS Global Survey (Yamada et al., 2021) dataset was analyzed in this research. The data can be found on the project's OSF page (https://osf.io/z39us/). The project acquired the approval of the Ethics Committee of the Aarhus University on 10th June 2020, after a waiver at the beginning of the data collection. The approval of the Ethics Committee of the Catholic University of Croatia was also obtained. The data in the final Croatian sample were gathered online from 31st March 2020 to 18th May 2020.

The original sample had N=2965, but only participants who identified as either male or female (N=2950), and who had no missing values in the variables used in modeling were retained, leading to the final sample of N=2115 (19.6% male). Those participants were on average 35.4 years old (SD=12.2), 15.3% had none or up to 12 years of education[3], 16.4% had some college education, 63.1% had a college degree and 5.2% had a doctoral degree.

Instruments

Attitudes towards COVID-19 public health measures (ACPM) ACPM were measured with the

[3] Participants with no education and with up to 6/9/12 years of school were pooled in one group due to lower frequencies in the single categories.

question "All things considered, do you believe that the government of the country you currently live in has taken appropriate measures in response to the coronavirus?". The participants responded on a scale from 0 (too little) across 5 (appropriate) to 10 (too much). Answers 0-3 were grouped into "too mild" (TM), 4-6 into "appropriate" (AP), and 7-10 into "too harsh" (TH). In the final sample, 71.5 % of participants considered measures appropriate, 24.1 % too harsh, and 4.4% too mild.

Institutional and interpersonal trust Institutional and interpersonal trust were measured according to the OECD guidelines (OECD, 2017), using the following questions: (1) "On a scale from 0 to 10, where 0 is not at all and 10 is completely, in general how much do you trust most people?" and (2) "On a scale from 0 to 10, how much do you personally trust each of the institutions below (0 means you do not trust an institution at all, and 10 means you have complete trust): [The parliament/government of the country you currently live in?]; [The health system of the country you currently live in?]; [The World Health Organization (WHO)?]".

Loneliness and social support Loneliness was measured with the 3-item UCLA loneliness scale (Hughes et al., 2004). Participants answered how often in the last week they felt a certain way on the 5-point Likert scale (1-never, 5-very often). The result was calculated as the average of three values if the participant answered all items; else, it was set to missing. Cronbach's alpha was α=.74.

Social support was measured via the shorter 10-item Social Provisions Scale (Steigen & Bergh, 2019; the original Social Provisions Scale was translated into Croatian language by Nekić, 2008). Participants expressed their agreement with the statements on a 6-point Likert scale (1-Strongly disagree, 6-Strongly agree). An example item was "I feel a strong emotional bond with at least one other person." The result was calculated as the average of all values if the participant answered at least 8/10 items; else, it was set to missing. Cronbach's alpha was α=.89.

Socio-demographic variables Age, sex and education were additionally measured as control variables.

Data analysis

The data were analyzed using six regression analyses, each with a distinct outcome variable: trust in people/parliament/health system/WHO, loneliness and social support. ACPM was the main predictor in all regression analyses, and it was modeled via two dummy variables with "appropriate" as the reference category. Control variables in the analyses were age, sex (reference category – male) and education (reference category – none or up to 12 years of education), together with the outcome variables from the other five regression analyses.

The parameters of interest were regression coefficients that marked the differences in the outcomes between AP and TM, and AP and TH. Standardized coefficients were estimated by refitting the models with standardized variables (categorical predictors were not standardized). The regression models were then used to estimate and compare marginal means in outcomes for each category of ACPM (using Tukey correction). The data was analyzed in R (R Core Team, 2021). For the sake of succinctness, only the parameters of interest are reported here (the regression coefficients of control variables are not crucial for testing the hypotheses).

Results

Participants generally reported lower levels of trust in government and higher levels of trust in healthcare institutions (both national and international; Table 1). Levels of loneliness were around the middle of the scale, whereas the distribution of social support scores was shifted towards the higher end and somewhat condensed (as evidenced by skewness < -1 and kurtosis > 1).

The parameters of interest are shown in Table 2. There were significant differences between AP and TM groups in trust in people (b=-0.56, p<.01), government (b=-0.51, p<.05) and healthcare system (b=-0.64, p<.01). Differences between AP and TH were significant for trust in government (b=-0.36, p<.01), WHO (b=-0.41, p<.01), and for loneliness (b=0.15, p<.01). These results are visualized on Fig-

Table 1. Descriptive statistics of numerical variables used in the study

		M	*SD*	*Skew.*	*Kurt.*	*Range*
Trust in...	people	4.88	1.98	-0.23	-0.38	0-10
	government	3.82	2.24	0.20	-0.55	
	healthcare sys.	6.49	2.23	-0.63	-0.00	
	WHO	5.63	2.50	-0.44	-0.49	
	Loneliness	2.90	0.88	0.10	-0.37	1-5
	Social support	5.06	0.70	-1.06	1.88	1-6

Note. skew. – skeweness; kurt. – kurtosis; health. sys. – healthcare system; range – theoretical scale ranges

ures 1 and 2 - the *b* coefficients correspond to the differences between the estimated marginal means. The *F* values test the significance of the whole ACPM effect (AP-TM and AP-TH effects taken together), and the Tukey post-hoc tests provide significance between categories of ACPM (these are basically comparable to significance of *b*-coefficients but corrected for multiple comparisons).

We can see that, compared to AP, TM had lower trust in people, government and healthcare system. On the other hand, the TH group had lower trust in government and WHO than AP. Finally, the TH group felt lonelier than AP, but there were no differences in social support between the groups.

Table 2. Standardized and non-standardized regression coefficients for the effects appropriate – too mild (AP-TM) and appropriate – too harsh (AP-TH) for six outcome variables

		AP - TM				AP - TH			
	Outcomes	*β*	*b*	*SE*	*t*	*β*	*b*	*SE*	*t*
Trust in...	... people	**-0.28**	**-0.56**	**0.20**	**-2.84****	0.06	0.11	0.10	1.17
	... government	**-0.23**	**-0.51**	**0.20**	**-2.56***	**-0.16**	**-0.36**	**0.10**	**-3.67****
	... healthcare sys.	**-0.29**	**-0.64**	**0.19**	**-3.39****	-0.03	-0.07	0.09	-0.77
	... WHO	0.08	0.20	0.22	0.90	**-0.16**	**-0.41**	**0.11**	**-3.80****
	Loneliness	0.17	0.15	0.09	1.64	**0.17**	**0.15**	**0.04**	**3.43****
	Social support	-0.10	-0.07	0.07	-0.97	0.06	0.04	0.03	1.20

Note. The effects of control variables are not shown here for the sake of brevity. Each line represents the results from a separate analysis. Significant effects are bolded; * $p < .05$, ** $p < .01$

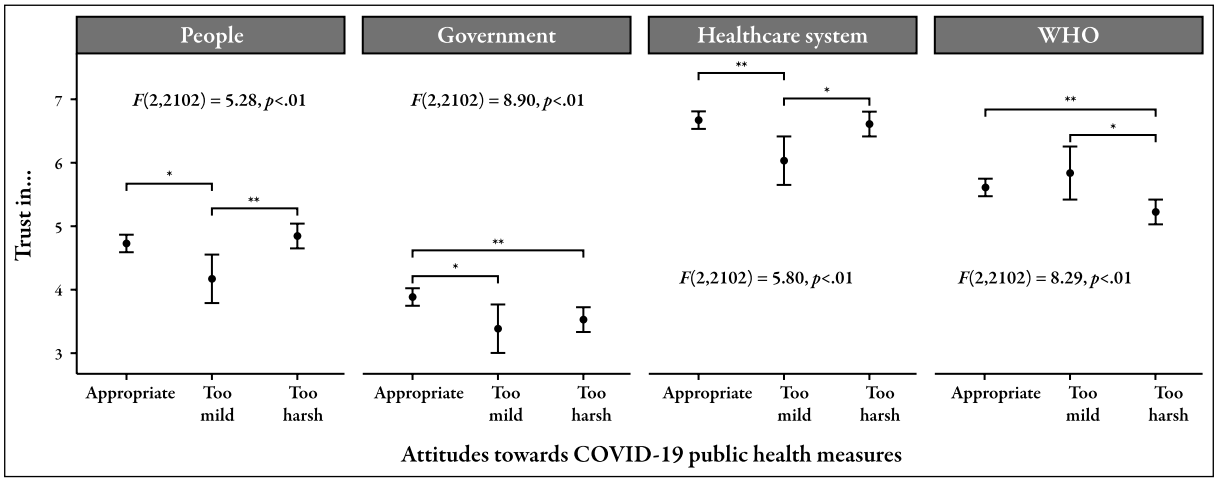

Figure 1. Estimated marginal means and their 95% confidence intervals for ACPM groups in different aspects of trust, together with the F-statistic and post-hoc tests for the given effect; * $p < .05$, ** $p < .01$

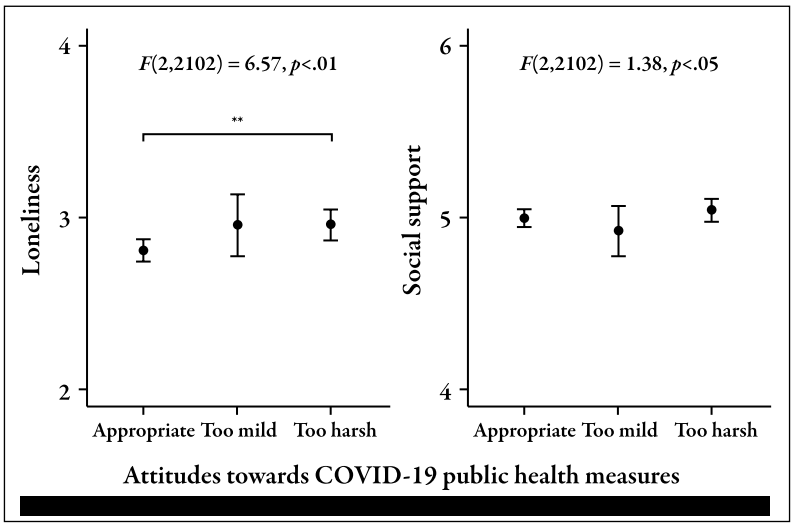

Figure 2. Estimated marginal means and their 95% confidence intervals for ACPM groups in subjective loneliness and social support, together with the F-statistic and post-hoc tests for the given effect; ** $p < .01$

Discussion and conclusions

The analyses showed that people who considered measures too mild had lower trust in people, government and health system than people who perceived them as appropriate. Thus, decreased trust was associated with those a) who were planning and implementing public health policies (government and national healthcare system), and b) who might have been dangerous, that is, infectious (other people).

These results are in concordance with findings of Rieger and Wang (2022), who found that perceiving measures as too weak was related with less trust in government, and the study of Gilles et al. (2022), which showed that those who perceived measures as less effective had less trust in medical and scientific institutions (but not in government). It is possible that the decrease of trust in institutions was a negative reaction, following the conclusion that the measures that were supposed to keep one safe were too weak. Interestingly, Gilles et al., (2022) also found no association of perceived effectiveness of measures and trust in non-Swiss institutions. This partly corresponds with the current findings that there was no difference in trust towards the WHO between the "appropriate" and "too mild" groups. The "too mild" group may have perceived national institutions as lacking competence to handle the pandemic, but maintained confidence in international health institutions. It would be interesting to investigate whether this group generally had more trust towards international institutions, or whether this applied solely to the context of the pandemic (bearing in mind that the questions about trust were general and not explicitly related to the pandemic).

Regarding the decrease in trust towards others, it can be assumed that people who considered measures too mild also perceived COVID-19 as a greater threat. Indeed, Constant et al. (2022) found that those who perceived COVID-19 as more harmful/severe were also more accepting towards implemented/implementing restrictive measures. After concluding that the measures were too mild (and that one is rather vulnerable), it is possible that additional psychological mechanisms for mitigating the infection kicked in. One such mechanism could be reducing the interpersonal trust, as that would likely lead to decrease of social contact. For instance, Siegrist et al. (2021) showed that people who had lower general trust in people also associated the coronavirus with greater health risks, and accepted measures more. However, it is also possible that people who were *a priori* more distrustful towards others considered the measures too mild, as they were doubtful about how committed others were to observing them. Unfortunately, it is not

possible to distinguish between these explanations with the current methodology.

For people who considered measures too harsh, a different pattern of lower trust was observed – it was directed towards government and the experts from outside the country (WHO), while the trust towards the national healthcare system was not compromised. This is in line with the findings by Rieger and Wang (2022) that not only those who perceived measures as too weak (see above), but also those who perceived them as too extreme had reduced trust in government. However, the reasons behind decreased governmental trust in the "too mild" and "too harsh" groups are likely different. As suggested earlier, the first may be worried for their safety, and express distrust towards government as a result. The latter are probably more worried about their personal freedoms (e.g., regarding social interactions, working on-site, traveling etc.), and believe that the tradeoffs for introducing such strict regulations have not been properly scrutinized, as implied by the study of Siegrist et al., (2021). The same study also showed that the people who accepted measures less also indicated less confidence in the society, and a stronger belief that the authorities were not open and honest about things related to the coronavirus. In the current study, this skeptical attitude was probably also transferred to the WHO. However, it is interesting that no similar findings were observed for the national healthcare system in the "too harsh" group, indicating that it was perceived as more trustworthy than government and the WHO (at least at the start of the pandemic). Perhaps the group saw the national healthcare system as an agent that only administrated the decisions related to the stringency of measures, and not as the one who made them (like government and the WHO). Still, no definite conclusions about the reasons for these findings may be drawn from this study alone.

Finally, people who considered measures too harsh were also lonelier than those who considered them appropriate. This is consistent with findings by Raina and Coppola (2022) and Stickley et al. (2021), and may indicate that loneliness is one of the reasons why measures were experienced as too harsh. Interestingly, no difference in social support between groups was found, further supporting the idea that the subjective loneliness and the amount of social support are not interchangeable constructs. It is possible that differences would be observed had the source of social support been specifically identified, as studies showed contrasting reactions to measures for people with different sources of social support (e.g., Paykani et al., 2020).

In conclusion, people who considered measures too mild and too harsh showed a different pattern of mistrust and loneliness/social support, which might potentially be explained by distinct psychological mechanisms. These findings may prove valuable for the implementation of public health measures in general since they help to elucidate a part of the differences between people who find them appropriate and inappropriate.

Limitations and outlook

Although the results of this study offer interesting insights about the relationship between ACPM, trust and loneliness/social support, there are several limitations that need to be mentioned.

First, the sample was large, but it was not representative – it consisted mainly of female participants and people with higher levels of education. Furthermore, fewer participants in the TM category may have led to some differences being insignificant due to the lack of power (e.g., the AP-TM difference for loneliness). Second, the data were gathered at the beginning of the COVID-19 pandemic. It is questionable whether such findings would be replicated later when more information about the coronavirus was available. Third, we cannot be sure what the true nature of the relationships observed in the study is, that is, whether the variables are causally linked (and if yes, in which direction). Finally, to understand individual differences in ACPM better, it would be valuable to conduct qualitative studies where people may explain in detail why they find the measures (in) appropriate.

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