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Institutional Distrust: Catalyst or Consequence of the Spread of Unfounded COVID-19 Beliefs?

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In the present study, we test two competing but mutually complementary hypotheses about the relationship between endorsement of unfounded beliefs during the COVID-19 pandemic (i.e., conspiracy and pseudoscientific beliefs) and institutional trust. To overcome the correlational nature, we used a 3-wave longitudinal design to examine whether low institutional trust predicts unfounded beliefs or vice versa. The final sample consists of 929 participants with full data sets from all three waves (49.80% women). We used the cross-lagged panel model (CLPM), which is well suited to examine the temporal directionality of the relationship between two variables. The results showed a consistent pattern in terms of trust in experts: the effects of conspiracy and pseudoscientific beliefs predicting distrust in experts were stronger than the reverse pattern. For trust in government, the results showed support for both hypotheses. The study contributed to explaining possible causal relationship between unfounded beliefs and institutional trust, i.e. conspiracy and pseudoscientific beliefs may have directly predicted lower trust in experts and scientific institutions.

Key words: unfounded beliefs, conspiracy beliefs, pseudoscientific beliefs, institutional trust, trust in government, trust in experts, COVID-19 pandemic, longitudinal research

Introduction

In times of social crises, such as the COVID-19 pandemic, there is an increased likelihood of the spread of unfounded beliefs (UBs) (Ullah et al., 2021; van Prooijen & Douglas, 2017). Such crises often create uncertainty and distrust, leading to a greater need for simple and comprehensible explanations that UBs may provide (Douglas et al., 2017; Goertzel, 1994; van Prooijen & Jostmann, 2013). Among the most prevalent types of UBs are conspiracy theories, such as those claiming that malev-

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olent groups or powerful individuals are plotting to take control of the population (Goertzel, 1994), and pseudoscientific beliefs, e.g., accounts stating that Big Pharma corporations are selling dangerous vaccines and drugs (Jolley & Douglas, 2017).

During the COVID-19 pandemic, conspiracy and pseudoscientific beliefs focused on the origin of the virus (Imhoff & Lamberty, 2020), preventive measures such as hygiene and social distancing practices, and vaccination related to the COVID-19 outbreak (Bierwiaczonek et al., 2020). Acceptance of conspiracy and pseudoscientific beliefs was related to both interpersonal trust (Abalakina-Paap et al., 1999) and institutional trust, e.g., toward governments and politicians (Douglas et al., 2019). These institutions ordered preventive measures to combat the virus and recommended vaccination as one of the most effective solutions (WHO, 2023). However, research suggests that individuals embracing conspiracy and pseudoscientific beliefs are less likely to follow these measures (Banai et al., 2022; Karić & Međedović, 2021; Wirawan et al., 2021) and also have a lower institutional trust (Kim & Kim, 2021; Romer & Jamieson, 2020). And yet, due to the correlational character of most of the studies (for a review, see van Mulukom et al., 2022), the exact nature of the relationship between trust and UBs cannot be inferred with certainty.

Specifically, distrust in institutions could be seen as either a consequence or an antecedent of the endorsement of UBs (Einstein & Glick, 2013; Lee et al., 2022). It is important to disentangle this relationship because since, on one hand, these institutions can become targets of some conspiracy theories (e.g., government uses the vaccines to control the population) or occasionally misinformation spreaders, on the other hand, at least in the context of Slovakia (e.g., politicians recommending pseudoscientific remedies instead of vaccination, e.g., Mesežnikov, 2022), it affects their ability to promptly and objectively present essential issues, such as pandemic measures. Therefore, the main aim of this study is to examine in more detail the relationship between trust in institutions and the acceptance of conspiracy and pseudoscientific beliefs about COVID-19 in the Slovak context, where high prevalence of conspiracy theories and distrust in institutions has previously been documented (Hajdu, 2021)[1]. To address this question about possible causal relationships between institutional trust and acceptance of conspiracy and pseudoscientific beliefs, we will make use of the cross-lagged panel model (CLPM) (Selig & Little, 2012) in order to analyze the data from three waves of data collected from 2021 – 2023. Before we introduce our research design in more detail, we outline two competing hypotheses regarding the relationship between institutional trust and the endorsement of conspiracy and pseudoscientific beliefs, which we are aiming to test in the present study.

Distrust as a Consequence of Unfounded Beliefs

In many cases of UBs, such as conspiracy or pseudoscientific beliefs, authorities represented by institutions are typically portrayed as central figures within the alleged conspiratorial schemes (Cordonier et al., 2021), which can lead people believing in conspiracy theories to lose trust in these institutions. UBs and institutional trust are related (van Prooijen et al., 2022a), and this relationship became even more pronounced during the COVID-19 pandemic (Pummerer et al., 2022).

[1] The survey showed that 75% of respondents judged the Slovak government to have handled the COVID-19 pandemic badly. Even before the pandemic, Slovakia was the most conspiracy-prone nation among V4 countries (Klingová, 2019).

Each country introduced its own preventive measures to combat the virus and these practices were conveyed to the citizens by the authorities such as government and health experts. Conspiracy beliefs can have negative societal consequences, especially regarding health-related topics such as vaccination (Jolley & Douglas, 2014a) and some research has pointed to a possible causal relationship, where exposing individuals to COVID-19 UBs led to a decreased trust in institutions (Pummerer et al., 2022) and lowered adherence to recommended measures. Before the pandemic, Kim and Cao (2016) showed that when participants watched a video on the Moon landing conspiracy theory, it reduced their trust in government immediately after the viewing and even two weeks later. In essence, this framework anticipates that acceptance of conspiracy and pseudoscientific beliefs is related to decreased trust in institutions over time.

Distrust as an Antecedent of Unfounded Beliefs

The environment in which we find ourselves can include factors that may support individuals in accepting conspiracy or pseudoscientific beliefs. Eroded trust in institutions that typically inform the public about events is a prerequisite for people to seek alternative sources. For example, Einstein and Glick (2013) showed experimentally that under some circumstances, such as political scandals, people were more prone to subscribe to conspiracy beliefs. This suggests that diminished trust in institutions due to political climate can influence individuals' susceptibility to conspiracy beliefs. Likewise, those who already distrust the authorities would likely reject their explanations for important events. These individuals are then more susceptible to believe in "alternative explanations". This also applies to a global health crisis as a societal issue, which provides an ideal opportunity for the spread of conspiracy and pseudoscientific beliefs (Pummerer & Sassenberg, 2020). Institutions represent enduring mechanisms that maintain social hierarchy and guide their citizens toward appropriate behavior (Miller, 2019). There are various types of institutions, from political representatives to scientific authorities, and each of them fulfills its role. If individuals have their trust disrupted, they turn to conspiracy beliefs that provide them with a sense of control (Douglas et al., 2017) and enable them to differentiate themselves from institutions (i.e., out-group). These institutions are then perceived as a group of powerful people acting in secret with malevolent intentions as part of a conspiracy (Miller et al., 2016). Specifically, in the case of the COVID-19 pandemic, individuals may place their trust in these institutions at different levels (Lee et al., 2022). Therefore, in our paper, we distinguish between political and scientific institutions in the context of the COVID-19 pandemic as a public health issue, rather than institutional trust as a one-dimensional concept (Grežo et al., 2022).

Present Study

In the present study we test two competing hypotheses: institutional distrust (government vs. scientific institutions) as an antecedent (Hypothesis 1) or consequence (Hypothesis 2) of belief in conspiracy theories and pseudoscience. Even though conspiracy and pseudoscience beliefs share common elements and are highly correlated (Lobato et al., 2014), we decided to examine them separately for more fine-grained analysis. Although the relationship between institutional trust and UBs has been studied extensively, due to the cross-sectional design and correlational nature of most of the previous studies, the interconnection of

these variables in the context of causal relationships has been insufficiently explained.

Method

Sample

We used a longitudinal study design which was part of a larger study (https://osf.io/28vs4/?view_only=0c9c4007deda483ba18fffa2fc97cd10) conducted at the Slovak Academy of Sciences. We tested our research hypotheses using three waves of data collection of the same respondents in Wave 1 (October 2021; N_{W1} = 1838), Wave 2 (July 2022, N_{W2} = 1420), and Wave 3 (March 2023, N_{W3} = 929). The final sample consisted of participants with full data sets from all three waves (N = 929; 49.80% women). The age ranged from 18 to 85 years (M = 49.53, SD = 15.81). The entire study was approved by the ethical committee of the Slovak Academy of Sciences.

Measures

All the measures described below were administered in the same manner in all three waves of data collection. The institutional trust measure in the first wave of the data collection was subjected to exploratory factor analysis (see below) to determine the appropriate psychometric structure; the same structure was subsequently utilized to analyze the institutional trust in the second and third wave of the data collection.

Institutional trust was assessed with eight items measuring trust toward authorities in the context of the Slovak Republic and European Union: Ministry of Health of the Slovak Republic, Prime Minister of the Slovak Republic, President of the Slovak Republic, government of the Slovak Republic, European Union, European Medicines Agency, Slovak Academy of Sciences, doctors and healthcare professionals on a 10-point scale from 1 = *I absolutely do not trust* to 10 = *I absolutely trust*. Using EFA (minimum residual for factoring method with oblimin rotation; number of factors was based on FA; using polychoric/tetrachonic correlations) on the data from the first wave of the data collection, we divided the scale of Institutional Trust into three factors that we extracted from the analysis: [Bartlett's test $\chi^2(28)= 7331.65$, $p < 0.001$; Overall KMO = 0.89; the Chi squared test $\chi^2(7)= 50.04$, $p < 0.001$; CFI = 0.99; RMSEA = 0.08, CI90% (0.061 - 0.103); SRMR = 0.01]. The first factor was named *Government* (3 items); second factor *European Union* (3 items); third factor *Experts* (2 items). We excluded the factor *European Union* from the primary analysis (results are available in Supplementary material) as it was not the focus of this paper.

COVID-19 Unfounded Beliefs (C19-UB) (Teličák & Halama, 2022) were assessed with 18 items on a 5-point scale from 1 = *totally disagree* to 5 = *totally agree*. Originally the scale has three dimensions: *COVID-19 conspiracies* (7 items); *COVID-19 pseudoscientific beliefs related to treatment* (6 items) and *COVID-19 pseudoscientific beliefs related to measures* (5 items), however, we combined the two pseudoscientific subscales into one (*COVID-19 pseudoscientific beliefs,* 11 items) since we did not hypothesize about different patterns of results for different types of pseudoscientific beliefs.

Analytical Approach and Testing of Hypotheses

To examine whether it is low institutional trust that predicts UBs or the other way around, we employed a 3-wave longitudinal design. Specifically, we used the cross-lagged panel model (CLPM) (Selig & Little, 2012), which helps to

better understand the relationships between UB's and other psychological variables (van Prooijen et al., 2022b; van Prooijen & Böhm, 2023), in order to determine these relationships. This approach is quite well suited to examine the temporal directionality of the relationship between two variables, as it enables a test of two contrasting but not mutually exclusive hypotheses of unfounded beliefs and institutional trust. We analyzed whether 1) distrust in institutions (W1) has an impact on the higher acceptance of COVID-19 UBs (W2), or 2) whether the uptake of COVID-19 UBs (W1) has an impact on a higher distrust in institutions (W2). We repeated this process in the third wave of data collection (W3). Using this model, we could further clarify the relationship between these variables and determine whether, in the context of the Slovak Republic, distrust in institutions has a priori influence on a higher acceptance of COVID-19 UBs or whether this relationship is reversed. A third possibility is that this relationship is bidirectional, and variables mutually influence each other.

Results

Correlations and the descriptive statistics of measured variables are displayed in Table 1. We analyzed the data through structural equation modeling using *lavaan-package* in R software (Rosseel, 2012). To determine model fit, we relied on three most used indicators, CFI (acceptable fit if > 0.90), the RMSEA (< 0.08), and the SRMR (< 0.06) (Alhija, 2010). The cross-lagged panel model (CLPM) enables us to test reciprocal relationships between two variables over time, in our case – COVID-19 unfounded beliefs and institutional trust. This model is designed to measure the temporal directionality of the relationship between two variables; it simultaneously controls for cross-sectional relationships between the two variables, autoregressive relationships of the same variable over time which means its stability, and the cross-lagged relationships between the two variables (Zyphur et al., 2020). Below, we present four CLPM analyses, with a separate panel model for conspiracy and pseudoscientific beliefs and for the two types of institutional trust (trust in government and in experts).

COVID-19 Conspiracy Beliefs and Trust in Government

The CLPM provided a good fit of data according to two out of three indicators [CFI = 0.953; RMSEA = 0.257, 90% CI (0.231– 0.285); SRMR = 0.033; $\chi^2(4, N = 925) = 248.910$, $p < 0.001$]. The RMSEA suggested a poor fit. This may have been caused by our model having a relatively small number of degrees of freedom, which has been known to cause RMSEA to falsely indicate a poor model fit (Shi et al., 2021). This was also true for all other models presented below. Given the good CFI and SRMR values, we considered the model fit to be acceptable. As displayed in Figure 1, COVID-19 conspiracy beliefs and government trust were significantly negatively associated in all three waves. From Wave 2 to 3, these relationships are weaker which might be due to the Russia-Ukraine military conflict, which sparked new and more current unfounded beliefs. Cross-lagged effects were all significant. Between Wave 1 and Wave 2, decreased trust in government predicted acceptance of COVID-19 conspiracy beliefs to a significantly stronger extent than vice versa, as indicated by the Wald test $\chi^2(1) = 6.45$, $p = 0.011$. From Wave 2 to Wave 3, on the other hand, COVID-19 conspiracy beliefs strongly predicted a decrease in institutional trust rather than vice versa, Wald test $\chi^2(1) = 3.96$, $p = 0.046$. Thus, it is apparent that there were different directions of relationships between COVID-19

Table 1 *Descriptive statistics, Cronbach´s alpha and intercorrelations of the measured variables*

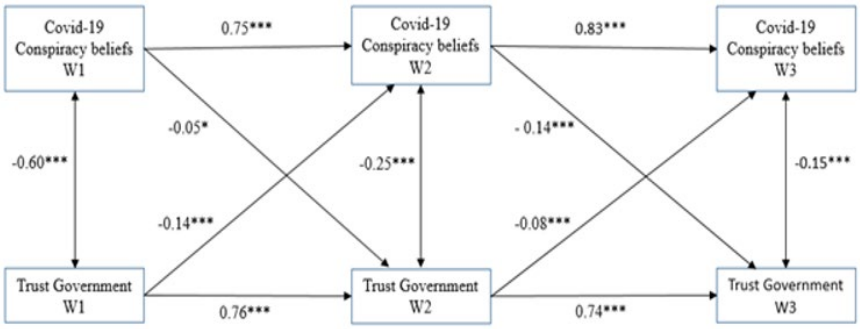
Measure	*M*	*Med.*	*SD*	*α*	1	2	3	4	5	6	7	8	9	10	11
1. Covid-19 Conspiracy beliefs W1	2.56	2.42	1.32	0.96	—										
2. Covid-19 Conspiracy beliefs W2	2.52	2.33	1.35	0.97	0.84	—									
3. Covid-19 Conspiracy beliefs W3	2.72	2.71	1.39	0.97	0.84	0.87	—								
4. Covid-19 Pseudoscientific beliefs W1	2.22	2.09	0.94	0.92	0.83	0.76	0.75	—							
5. Covid-19 Pseudoscientific beliefs W2	2.23	2.09	0.97	0.92	0.76	0.86	0.79	0.84	—						
6. Covid-19 Pseudoscientific beliefs W3	2.22	2.18	0.96	0.91	0.74	0.77	0.81	0.83	0.84	—					
7. Trust Government W1	4.05	3.67	2.61	0.91	-0.60	-0.59	-0.59	-0.57	-0.55	-0.54	—				
8. Trust Government W2	3.70	3.00	2.51	0.90	-0.51	-0.57	-0.55	-0.52	-0.52	-0.51	0.79	—			
9. Trust Government W3	3.65	3.33	2.42	0.89	-0.52	-0.56	-0.57	-0.51	-0.52	-0.53	0.76	0.82	—		
10. Trust Experts W1	6.50	7.00	2.54	0.88	-0.66	-0.61	-0.61	-0.63	-0.59	-0.57	0.64	0.52	0.51	—	
11. Trust Experts W2	6.03	6.50	2.66	0.89	-0.59	-0.60	-0.59	-0.60	-0.59	-0.56	0.60	0.67	0.58	0.75	—
12. Trust Experts W3	5.93	6.00	2.61	0.89	-0.60	-0.60	-0.61	-0.60	-0.59	-0.58	0.58	0.58	0.64	0.74	0.77

Note. All correlations were significant ($p < 0.001$); Med. – Median; Pearson's correlational coefficient was used.

conspiracy beliefs and trust in government at particular waves.

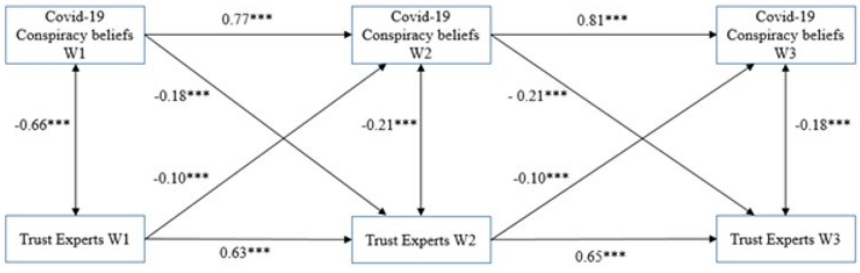
COVID-19 Conspiracy Beliefs and Trust in Experts

The CLPM had an acceptable fit according to two out of three indicators, again except RMSEA [CFI = 0.949; RMSEA = 0.262, 90% CI (0.236 – 0.290); SRMR = 0.039; $\chi^2(4, N = 925) = 258.699$, $p < 0.001$]. The cross-sectional relationships between COVID-19 conspiracy beliefs and trust in experts were significantly negative. The same trend of weaker relationships can be seen from Wave 2 to Wave 3, which could have been caused by more recent societal factors such as the Russia-Ukraine military conflict. As to the cross-lagged effects, all were significant. COVID-19 conspiracy beliefs predicted decreased trust



Note. *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

Figure 1 The relationship between COVID-19 conspiracy beliefs and trust in government over time (fully standardized solution).



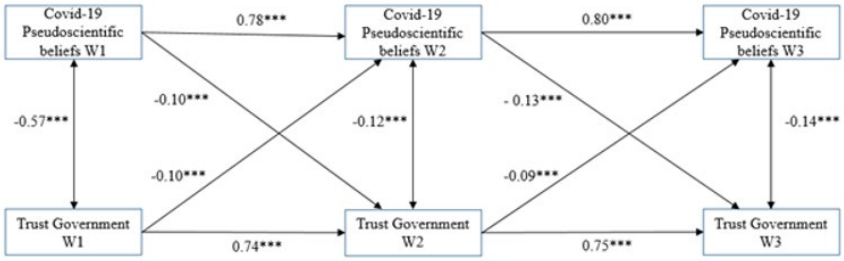
Note. *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

Figure 2 The relationship between COVID-19 conspiracy beliefs and trust in experts over time (fully standardized solution).

in experts to a stronger extent than vice versa, as indicated by the Wald test $\chi^2(2) = 71.41$, $p < 0.001$. As Figure 2 shows, both standardized coefficients for the paths from trust in experts to COVID-19 conspiracy beliefs were lower than the corresponding paths in the opposite direction.

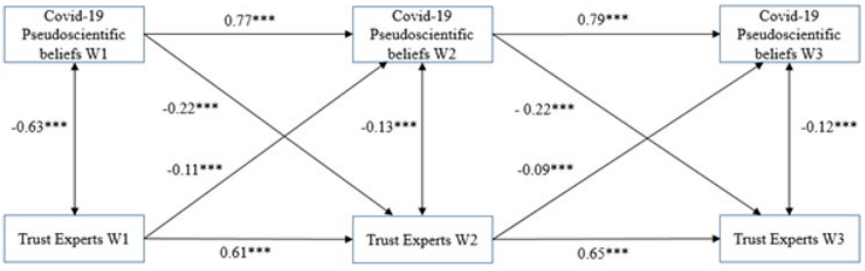
COVID-19 Pseudoscientific Beliefs and Trust in Government

The CLPM had an acceptable fit according to two out of three indicators, except for the RMSEA [CFI = 0.951; RMSEA = 0.255, 90% CI (0.228 – 0.283); SRMR = 0.034; $\chi^2(4, N = 925) = 244.438$, $p < 0.001$]. The cross-sectional relationships between COVID-19 pseudoscientific beliefs and institutional trust (Government factor) were all significant and negative. Again, the tendency of weaker relationships can be seen across the particular waves (from Wave 2 to Wave 3). Cross-lagged effects were all significant. Between Wave 1 and Wave 2, the strength of prediction between the two paths did not differ significantly. COVID-19 pseudoscientific beliefs and trust



Note. *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

Figure 3 The relationship between COVID-19 pseudoscientific beliefs and trust in government over time (fully standardized solution).



Note. *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

Figure 4 The relationship between COVID-19 pseudoscientific beliefs and trust in experts over time (fully standardized solution).

in government predicted each other in cross-lagged paths. Although from Wave 2 to Wave 3, COVID-19 pseudoscientific beliefs predicted a decrease in governmental trust rather than vice versa, the difference in coefficients was not statistically significant, Wald test $\chi^2(1) = 1.42$, $p = 0.23$ (Figure 3).

COVID-19 Pseudoscientific Beliefs and Trust in Experts

The CLPM showed a good fit, again according to the CFI and SRMR but not according to the RMSEA [CFI = 0.946; RMSEA = 0.265, 90% CI (0.238 – 0.292); SRMR = 0.038; $\chi^2(4, N = 925) = 262.972$, $p < 0.001$]. The results reflected a similar trend as for COVID-19 conspiracy beliefs with trust in experts. The cross-sectional relationships between COVID-19 pseudoscientific beliefs and trust in experts were all significant and negative. For cross-lagged paths, all relationships were significant. COVID-19 pseudoscientific beliefs predicted a decrease in trust in experts rather than vice versa, the coefficients were significantly larger for these paths than for the corresponding paths in the opposite direction as evidenced by the Wald test, $\chi^2(2) = 122.91$, $p < 0.001$ (Figure 4).

Discussion

The present study examined temporal relationships between institutional trust, conspiracy and pseudoscientific beliefs related to the COVID-19 pandemic. We have concentrated on various groups of institutions, moving beyond the one-dimensional approach (Grežo et al., 2022). Furthermore, one year into the pandemic, the containment measures ceased to be solely driven by public health concerns and instead became highly politicized. Using three waves of data collection enabled us to test two possible hypotheses about the relationships between UBs and institutional trust (trust in government and experts): Institutional trust as a consequence or an antecedent of unfounded beliefs.

For trust in government, our results are less straightforward than we hoped but they still provide us with some important insights. The overall cross-lagged effects showed support for both hypotheses. The predictive powers varied across waves, with distrust more strongly predicting conspiracy beliefs from W1 to W2, while from W2 to W3, it was the other way around. With pseudoscientific beliefs, from W1 to W2, the cross-lagged effects were not significantly different in strength. Distrust in political institutions could have been caused by other external factors. For example, certain anti-epidemic measures under the leadership of the former Slovak Prime Minister were often chaotic, poorly planned, and implemented abruptly (Verseck, 2021). This may have created a sense of uncertainty for many people that may have subsequently played a role in the spread of conspiracy beliefs and undermined institutional trust (Mari et al., 2022). Additionally, a political scandal involving a secret deal regarding the Sputnik V coronavirus vaccine, which led to the resignation of the Prime Minister (Holroyd, 2021), could potentially have contributed to reduced trust in the government, thereby fostering greater acceptance of conspiracy beliefs (Einstein & Glick, 2013). Furthermore, it could be the political preferences of individuals and the level of societal polarization. The coalition was almost immediately criticized by the opposition, which supported the spread of conspiracy beliefs about the pandemic, for restricting the rights of citizens at the onset of the pandemic. The connection between conspiracy beliefs and the expression of violence has been established through prior research (Jolley & Paterson, 2020; Marchlewska et al., 2019), and this was manifested in the form

of an unauthorized protest against COVID-19 measures in the capital city of Slovakia during lockdown (The Slovak Spectator, 2021b). Pseudoscientific beliefs are directed more towards scientific authorities and experts in current fields rather than a political establishment. Future research could focus on the mediated relationships of these variables between conspiracy beliefs and trust, specifically in the government.

With regard to trust in experts, standardized effects of conspiracy and pseudoscientific beliefs predicting distrust in experts over time were stronger than in the reverse pattern. The results align with previous experimental research (Kim & Cao, 2016; Pummerer et al., 2022) where, after exposure to conspiracy theories, participants' levels of institutional trust decreased both in the short and longer term. Undermining trust in experts and science using unfounded beliefs is particularly dangerous, especially in the context of the COVID-19 pandemic, as it had far-reaching public health consequences in the form of non-compliance with pandemic measures (Banai et al., 2021, 2022; Wirawan et al., 2021) and vaccine hesitancy (Ullah et al., 2021). Research on these aspects was also carried out before the pandemic (Jolley & Douglas, 2014b, 2014a; Lewandowsky et al., 2013). While it can be true that experts sometimes fail in their decisions, there are usually more corrective processes in play than in political institutions. Politicians (especially in the case of Slovakia) often undermined their own credibility and trustworthiness by their erratic and incompetent decisions and behavior (Verseck, 2021). Simultaneously, in some cases, politicians did not listen to the advice of their own health experts and scientists regarding the COVID-19 pandemic, thereby undermining their expertise. This can lead to the polarization of the population and the conforming acceptance of narratives by their political representatives as prototypical group members (McGarty et al., 1992).

Moreover, weaker relationships between types of COVID-19 UBs and institutional trust from W2 to W3 could have been caused by the new crisis in the form of the Russian invasion of Ukraine in February 2022 and thereby largely replacing COVID-related misinformation by conspiracy narratives about the conflict. UBs occur in various contexts of social crises (van Prooijen & Douglas, 2017) and with different content (Sternisko et al., 2020) but they can still satisfy feelings of uncertainty, control, and explanations of events (Douglas et al., 2017).

Although our present research has certain strengths, such as its longitudinal design, it also has limitations, for example, the possibly limited generalizability due to specific context of Slovakia. Slovakia was the only country in Europe where political representatives did not fully embrace the vaccination program and politicians in opposition actively spread conspiracy theories against vaccination (Mesežnikov, 2022), leading to one of the lowest vaccination rates in the region (ECDC, 2022), and at some time point, highest death toll since the World War II caused either by the pandemic or by poorer access to health care (The Slovak Spectator, 2021a). It is unclear to what extent the findings can be generalized to countries with different societal settings; however, this is also a strength since Slovakia served as a valuable case study among European countries in that specific context. The next limitation is that even within-person longitudinal designs do not offer conclusive evidence for causality (Rohrer & Murayama, 2023). While the results are consistent with the idea that distrust in institutions (Experts factor) is more a consequence of accepting conspiracy and pseudoscientific beliefs than vice versa, this needs further support by experimental designs in which

UBs causally influence individuals' trust in institutions (Kim & Cao, 2016; Pummerer et al., 2022).

Conclusions

Our results underline the role of conspiracy and pseudoscientific beliefs in relation to institutional trust during the COVID-19 pandemic. Presumably, conspiracy and pseudoscientific beliefs predicted decreased institutional trust, specifically trust in experts, rather than vice versa over time. When it comes to trust in government, our results are not as straightforward as we had hoped. We need more experimental designs to support causal relationships, possibly also in other contexts of conspiracy and pseudoscientific beliefs in relation to institutional trust.

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