Supplementary analyses

A. Due to structural relationship between the variables "*overconfidence"* and *"actual scientific knowledge",* we cannot use both predictors in one linear regression analysis. To address this problem, we suggest two possible solutions: 1) instead of the variable *"overconfidence",* which was calculated as a difference between estimated score on scientific knowledge and actual score on scientific knowledge, use the estimated and actual score separately in the analysis. This solution is presented in the study. The second possible solution 2) is to create a new categorical variable from the "overconfidence" variable. This second procedure is presented below. However, both strategies led to same nonsignificant results regarding the role of the overconfidence in predicting COVID-19 conspiracy beliefs.

Procedure: From the "*overconfidence"* score was created a new variable "*overconfidence categories*" with three categories: -1 = underconfident; 0 = well calibrated; 1 = overconfident

We set thresholds according to the score of Overconfident variable as follows:

Those participants with values -1 and less, were classified as underconfident and denoted -1; those with the exact value 0 were classified as well-calibrated and denoted 0 and those with the values 1 and higher were classified as overconfident and denoted 1 (see Table A).

By converting overconfidence into such ordinal variable, we are reducing (although not fully) the risk of multicollinearity. However, we are aware that such strategy is related to some loss of the variability in the data.

Table A *Descriptives of the new ordinal variable "overconfidence categories"*

		Frequency	Percent
Categories	Underconfident (-1)	149	29.7
	Accurate (0)	109	21.8
	Overconfident (1)	243	48.5
	Total	501	100.0

The results of the hierarchical linear regression are shown in Table B. Probabilistic reasoning was entered in the first step, scientific reasoning together with actual scientific knowledge in the second step and overconfidence categorical variable and anti-scientific attitudes in the third step.

Table B *Hierarchical linear regression analysis predicting COVID-19 conspiracy beliefs*

Variable	*B (SE)*	*β*	*t*	*p*	95% CI for *β*
Step 1					
Constant	3.07 (.12)		25.35	<.001	
Probabilistic reasoning	**-.18 (.03)**	**-.24**	**-5.48**	**<.001**	[-.32, -.15]
	F (1,499) = 30.07, R^2 = .06, *p* = < .001				
Step 2					
Constant	4.09 (.21)		19.33	<.001	
Probabilistic reasoning	**-.10 (.03)**	**-.14**	**-2.96**	**.003**	[-.23, -.05]
Scientific reasoning	**-.04 (.02)**	**-.11**	**-2.35**	**.019**	[-.20, -.02]
Scientific knowledge actual	**-.14 (.03)**	**-.21**	**-4.58**	**<.001**	[-.30, -.12]
	F (3,497) = 22.03, ΔR^2 = .06, *p* = < .001				
Step 3					
Constant	1.30 (.32)		4.11	<.001	
Probabilistic reasoning	**-.07 (.03)**	**-.10**	**-2.36**	**.018**	[-.17, -.02]
Scientific reasoning	-.01 (.02)	-.04	-.87	.385	[-.12, .04]
Scientific knowledge actual	**-.09 (.03)**	**-.13**	**-2.86**	**.004**	[-.23, -.04]
Overconfidence categories	.00 (.05)	.00	.08	.936	[-.08, .09]
Anti-scientific attitudes	**.67 (.05)**	**.48**	**12.45**	**<.001**	[.41, .56]
	F (5,495) = 48.67, ΔR^2 = .21, *p* = < .001				

Note. Unstandardized (*B*), standardized regression coefficients (*β*) with significances and 95% confidence intervals for *β* are presented for each predictor. The table shows model statistics for each step, R^2, and changes as ΔR^2 with the appropriate statistical change. Significant predictors ($p < .05$) are presented in bold.

In the final model of the regression analysis, we see three significant predictors of COVID-19 conspiracy beliefs i.e., probabilistic reasoning, actual scientific knowledge, and anti-scientific attitudes. The overconfidence variable did not play a significant role. All predictors together explain 33% of the total variance of conspiracy beliefs.

B. Since we have not found support for the hypothesis that people will better reason scientifically when dealing with personal relevant context i.e., coronavirus related context, we additionally investigated whether there are any moderating effects of the conspiracy beliefs and anti-scientific attitudes on scientific reasoning ability.

We conducted two repeated measures ANOVA analyses. Both variables anti-scientific attitudes and COVID-19 conspiracy beliefs were split based into tertiles resulting in three categories that classified participants from those with the lowest level of these beliefs to those with the highest. In the first analysis, anti-scientific attitudes were entered as a between-subjects factor, and in the second analysis, COVID-19 conspiracy beliefs were used as a between-subjects factor. In both analyses, scientific reasoning was entered as a within-subjects factor with two levels: neutral content and COVID-19 content. The results are shown in Table C and Table D.

Table C *Results of repeated measures ANOVA analyses for scientific reasoning with anti-scientific attitudes as between-subject factor*

	Sum of Squares	*df*	*Mean Square*	*F*	*p*	η^2	η^2_p
Within-subjects effects							
Scientific reasoning (content)	294.00	1	294.00	326.70	< .001	.126	0.396
Content * Anti-scientific attitudes	2.10	2	1.05	1.16	.314	.001	.005
Between-subjects effects							
Anti-scientific attitudes	98.00	2	48.98	16.04	< .001	.042	.062

Note. *df* = degrees of freedom; *F* = F-ratio; *p* = p-value (significance level); η^2 = eta-squared (effect size); η^2p = partial eta-squared (effect size).

Table D *Results of repeated measures ANOVA analyses for scientific reasoning with COVID-19 conspiracy beliefs as between-subject factor*

	Sum of Squares	*df*	*Mean Square*	*F*	*p*	η^2	η^2_p
Within-subjects effects							
Scientific reasoning (content)	294.00	1	294.00	326.70	< .001	.126	0.396
Content * C-19 conspiracy beliefs	3.67	2	1.84	2.04	.131	.002	.008
Between-subjects effects							
C-19 conspiracy beliefs	73.90	2	36.93	12.2	< .001	.036	.047

Note. *df* = degrees of freedom; *F* = F-ratio; *p* = *p*-value (significance level); η^2 = eta-squared (effect size); η^2p = partial eta-squared (effect size).

In both analyses there was a significant main effect of the within-subject factor (scientific reasoning): F (1,498) = 326.66, $p < .001$. Participants' scientific reasoning scores were significantly higher for neutral content compared to COVID-19 content.

However, the interaction between scientific reasoning and anti-scientific attitudes was not significant, F (2,498) = 1.16, $p = .314$, indicating that the effect of content on scientific reasoning did not vary significantly across levels of anti-scientific attitudes. Similarly, the interaction between scientific reasoning and COVID-19 conspiracy beliefs was not significant, F (2,498) = 2.04, $p = .131$, indicating that the effect of content on scientific reasoning did not vary significantly across levels of COVID-19 conspiracy beliefs.

The main effect of anti-scientific attitudes was significant, F (2,498) = 16.4, $p < .001$, suggesting that participants with differing levels of anti-scientific attitudes scored differently on scientific reasoning overall. Similarly, the main effect of COVID-19 conspiracy beliefs was significant, F (2,498) = 12.2, $p < .001$, suggesting that participants with differing levels of COVID-19 conspiracy beliefs scored differently on scientific reasoning overall.