UDC 316.1 DOI 10.26425/1816-4277-2023-7-220-232

A critical attitude and its influence on behavior change in terms of forming a negative position towards governmental mitigation measures during a pandemic

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Abstract

As a strategy against the outbreak and the further spreading of Covid-19, countries, states and communities used different approaches. To protect citizens, governments developed coronavirus mitigation measures and due to which, people were confronted with restrictions in their everyday life. As could be observed in many countries, the society mood turned, since many people did not agree with these restrictions and some people even started demonstrating against governmental mitigation measures. In this context, it can be assumed that some people are more prone to believe in rumors and fake news spread on social media than others. Consequently, a critical attitude is being developed against the government and/or Covid-19 mitigation measures. The present study uses the quantitative data collection method to investigate why some people change their behavior in crises situations and why they are more prone to believing rumors and fake news on social media than others. The results showed that the higher people rate themselves as being critical, the less they believe in rumors and fake news on social media, the less they change their behavior during the pandemic in terms of rejecting Covid-19 mitigation measures. Therefore, it is also more likely that people will follow the measures to mitigate the effects of coronavirus infection.

Keywords

Pandemic, critical attitude, Covid-19, mitigation measures, fake news, rumors, social media

For citation: Kempkens O.H. (2023) A critical attitude and its influence on behavior change in terms of forming a negative position towards governmental mitigation measures during a pandemic. *Vestnik universiteta*, no. 7, pp. 220–232.

Критическое отношение и его влияние на изменение поведения с точки зрения формирования негативной позиции к правительственным мерам по смягчению последствий во время пандемии

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Аннотация

В качестве стратегии против вспышки и дальнейшего распространения Covid-19 страны и сообщества использовали различные подходы. Для защиты граждан правительства стран разработали меры по смягчению последствий Covid-19, и из-за этих мер люди столкнулись с рядом ограничений в своей повседневной жизни. Как было отмечено во многих странах, настроение социума изменилось, поскольку многие люди не были согласны с такими ограничениями, а некоторые даже начали проводить демонстрации против правительственных мер по смягчению последствий Covid-19. В этом контексте можно предположить, что некоторые люди более склонны верить слухам и фальшивым новостям в социальных сетях, чем другие. Следовательно, формируется критическое отношение к правительству и/или к мерам по смягчению последствий Covid-19. В данном исследовании используется количественный метод сбора данных для изучения того, почему некоторые люди меняют свое поведение в кризисных ситуациях, и почему они более склонны верить слухам и фальшивым новостям в социальных сетях, чем другие люди. Результаты показали, что чем выше люди оценивают себя как критически настроенных, тем меньше они верят слухам и фальшивым новостям в социальных сетях, тем меньше они меняют свое поведение во время пандемии с точки зрения отказа от мер по смягчению последствий Covid-19. Поэтому повышается и вероятность того, что люди последуют мерам по смягчению последствий Covid-19.

Ключевые слова

Пандемия, критическое отношение, Covid-19, меры по смягчению последствий, фальшивые новости, слухи, социальные сети

Для цитирования: Кемпкенс О.Х. Критическое отношение и его влияние на изменение поведения с точки зрения формирования негативной позиции к правительственным мерам по смягчению последствий во время пандемии// Вестник университета. 2023. № 7. С. 220–232.

INTRODUCTION

Countries and communities have a certain scope for action when it comes to the implementation of coronavirus mitigation measures. The Federal center is able to give recommendations and to set guidelines. However, the single federal states' as well as the single communities' freedom in designing their specific coronavirus mitigation measures is relatively high.

COVID-19 MITIGATION MEASURES IN GERMANY

G. Lu et al. compared Germany's Covid-19 mitigation strategy with China's [1]. The authors state that Germany followed a mitigation strategy, whereas China's goal was to eliminate the spreading of the virus.

The results showed that China and many neighboring countries have either achieved a Covid-19 elimination or at least sustained low case numbers. According to G. Lu et al., these developments can be traced back to the following aspects:

– other countries' experiences with previous outbreaks of Covid-19;

– countries' classification of the virus in the highest risk category accompanied with an early implementation of aggressive suppression measures;

– mandatory isolation of contacts and cases in institutions;

– countries' broad implementation of contact tracking technologies;

– countries travel restrictions to prevent a reimportation of Covid-19;

– cohesive communities that possess varying levels of social control.

G. Lu et al. consider that an early implementation of both strict and sustained measures can be seen as the major key to achieve a normal economic and social life [1].

In connection with people's acceptance with Covid-19 mitigation measures, Federal Agency for Civic Education in Germany (ger. the Bundeszentrale für politische Bildung) conducted a survey between March and July 2020 with a total of 3,600 participants [2]. The results show that people's agreement with Covid-19 mitigation measures was very high – up to 90% in March 2020. However, their agreement rapidly declined from March 2020 to July 2020. Indeed, the major aim of Covid-19 mitigation measures is to save people's lives. Nevertheless, for some people, the negative aspects of mitigation measures predominate the positive ones.

In this context D.A. Moser et al. concluded that an average person suffers 0.205 years, according to the YLL index (Years of Life Lost), due to the psychological consequences of Covid-19 mitigation measures [3]. They are influencing factors such as depression, childhood trauma, domestic violence, alcohol use disorder, social isolation and changes in marital status. These influencing factors are referred to increase the YLL, since they all came up with a restriction in the freedom of movement and social contact.

A. Haleem et al. explain that the pandemic affects our everyday life, business, world trade and slows down the global economy [4]. The study identified groups of significant consequences in various areas:

1) healthcare: high burden of the existing medical system, patients with other health problems and diseases are neglected;

2) economy: disruption of supply chains, slowing of the essential goods' manufacturing, poor market cash flow and slowing down in revenue growth;

3) social sphere: service sector cannot provide proper services, celebration of religious, festive, sport and cultural events, trips are disrupted, the stress level among the population is increasing.

Based on the analyzed scientific sources on a given topic, it can be concluded that mitigation measures not only avoid the spread of the virus, but also affect many other areas of life, such as people's mental health and the economic situation in the world. From this point of view, some people may be more prone to rumors and fake news on social media than others, depending on the extent to what they are affected by Covid-19 mitigation measures.

PEOPLE'S REACTIONS TO CRISIS SITUATIONS

Shaping an appropriate human behavior during crises situations helps slowing the spread of the virus. Understanding the psychology of human behavior in crises situations as well as the contribution of human behavior to an effective management of an outbreak thus is very important.

A. Abu-Akel, A. Spitz and R. West state that safety behaviors during a pandemic mostly include basic interventions such as a frequently washing of hands [5]. However, there can be observed a psychological mismatch in people's minds between people's perceived threat of a severe illness on one hand and the simplicity of recommended protective behaviors. Due to this contradiction, it may be possible that people do not adhere to those recommendations.

S. Arafat et al. add that misplaced fear and uncertainty about the future is likely to support irrational behaviors such as hoarding and panic-buying which might lead to domino effects such as inflated prices and artificially created shortages [6]. Media reporting of panic-buying enhances this behavior. Additionally, panic buying can be considered as a factor complementing and accompanying the spread of the virus due to the lack of sanitary products in access.

In the context of fighting the Covid-19, the concept of herd immunity can often be found in the media. V. Cherian et al. state that the vaccination of a sufficient share of the world's population would be step towards stopping the spread of the Covid-19 disease, since it is able to protect vulnerable persons [7]. In this context, psychological factors are of high relevance, since the vaccination is voluntary and the surrounding based on fear and anxiety regarding the possible side effects of the Covid-19 vaccination thus acts as a barrier and impedes a timely vaccination.

The current Covid-19 pandemic teaches key lessons about communication, crisis and misinformation. It also changes the scientists' way to study human behavior. The psychologist Van Bavel concentrated on predicting people's support for governmental public-health measures. Van Bavel et al. could show that people who rate national identity as being important are more likely to support governmental health policies [8]. They found out that national identification positively correlated with national narcissism as well as right-wing political ideology.

K.M. Douglas et al. add that people are more likely to believe in conspiracy theories whenever they perceive their psychological needs as being frustrated [9]. D. Graeupner and A. Coman state that conspiracy theories even gain more traction when people start to isolate themselves which might result in harmful consequences, since people's believe in conspiracy theories is associated with climate denial, prejudice, extremist political views and in the context of the present dissertation's topic, the vaccine hesitancy [10].

K.L. Milkman et al. focused on changing people's attitude towards Covid-19 mitigation measures and hereby especially the Covid-19 vaccine [11]. Authors emphasize that some groups could be identified as being more critical than others. This is for instance the case for young females – many of them are more skeptical about the Covid-19 vaccine.

RESEARCH HYPOTHESES

Some people might be more prone to rumors and fake news on social media than others, depending on the extent to what they are affected by specific mitigation measures. For this reason, it can be assumed that during time, people have developed a more critical attitude towards the Covid-19 mitigation measures, if they believe in rumors and fake news spread on social media. In a next step, it can be assumed that these people have changed their behavior during the pandemic in term of ignoring and disregarding governmental orders. To check this thesis, it is necessary to formulate the following hypothesis.

Hypothesis no. 1: people, who believe that there is some truth in rumors and fake news spread on social media, have developed a more critical attitude towards Covid-19 mitigation measures during the pandemic.

Further it can be assumed that critical individuals strive for exposing rumors and fake news in order to identify the truth. Critical individuals generally do not change their behavior during a pandemic in a way they refuse or oppose governmental mitigation measures. Thus, the following hypothesis is checked:

Hypothesis no. 2: the more people describe themselves as a critical person, the lower the risk they change their behavior in terms of developing a negative attitude towards the government's Covid-19 mitigation measures during the pandemic.

J. Van Bavel et al. could show the following connection. People who rate national identity as being important are more likely to support governmental health policies [8]. Thus, these people's attitude towards their home country is much more pronounced than the one of other people. Additionally, national identification positively correlates with national narcissism as well as right-wing political ideology. Thus, it can be assumed there might be specific characteristics or attitudes that make people more susceptible for rumors and fake news on social media. Therefore, the following hypothesis should be put forward.

Hypothesis no. 3: people are more susceptible for rumors and fake news on Covid-19, if they possess specific characteristics and attitudes such as being a critical person.

RESEARCH METHODOLOGY

The present survey was conducted in Germany and is based on the quantitative data collection method to answer the pre-defined hypothesis. The present research project strives for analyzing a relatively large sample on the base of numeric data. A structured and fully standardized online questionnaire was chosen as data collection instrument. The questionnaire contains 42 variables, whereas in most cases, these variables represent statements that had to be evaluated by the participants. Sociodemographic data were collected at the questionnaire's end, since it is assumed that people might get discouraged once they are questioned on sensible personal information first. To motivate participants and to emphasize the importance of the study, an introductory text explained the research topic briefly.

All questions were formulated in German to avoid that participants get problems in understanding the questions. The questions contained answering options, which are presented below a specific question. Statements have to be evaluated by the participants by using a four-point-scale with the following meaning:

– 1 (fully correct / I totally agree);
– 2 (rather correct / I agree);
– 3 (rather not correct / I generally do not agree);
– 4 (not correct at all / I do not agree at all).

DATA COLLECTION AND ANALYSIS

The survey was conducted between January to March 2021 by using SurveyMonkey. By means of this service, a link to the present online survey was created and in a next step could be distributed to potential participants with help of several social media platforms such as Facebook, WhatsApp and Twitter.

Initially, the sample size was calculated as per formula (1):

$$\frac{\frac{z^2 \cdot p(1-p)}{e^2}}{1+\left(\frac{z^2 \cdot p(1-p)}{e^2 N}\right)}, \quad (1)$$

whereas N – population size; e – confidence interval or fault range; z – confidence level; p – percentage value.

Since there are 83.1 million people who live in Germany thus, N = 83.1 million [12]. The entire population is directly affected by the Covid-19 governmental mitigation measures. The confidence interval is 5%, the confidence level is 95% and p = 0.5 is chosen as an estimate for the sample size. Inserting all values into the formula above leads to a sample size of 383 German citizens.

In summary, the data of 324 participants could be collected. It becomes clear that the calculated 380 cases could not be gathered within the three months. But the final sample of 324 German citizen is sufficient to gather first insights into their behavior during crisis situations. However, the study should be repeated with a larger sample.

For data analysis, IBM SPSS was used to conduct an appropriate descriptive analysis. Also, frequencies, standard deviations, means and correlations were calculated.

RESEARCH RESULTS

HYPOTHESIS NO. 1

It can be assumed that there is a positive correlation between believing in rumors and fake news and developing a more critical attitude towards Covid-19 mitigation measures. This might be due to the fact that during the pandemic, people are flooded with information on social media and it is hard to distinguish between rumors, fake news and true information. Thus, some people might begin to question Covid-19 mitigation measures. Therefore, it is necessary to test hypothesis no. 1.

To check the hypothesis no. 1., the following variables were considered:

1) Q16: I believe that many of Covid-19 rumors that are spread on social media are true;

2) Q13: during the pandemic, the rumors and fake news around Covid-19 have let me to doubt whether the ordered measures are useful and proportionally or not.

Since both variables are ordinally-scaled, a correlation analysis according to Kendall-Tau and Spearman can be conducted. The correlation (r) between Q16 and Q13 is highly significant on a 0.01 significance level (table 1). According to Kendall-Tau and Spearman, the correlation coefficients are 0.499

and 0.548, respectively. It indicates a positive connection between both variables and leads to the following conclusion. The stronger people believe in rumors and fake news, the more likely these people developed a critical attitude towards Covid-19 mitigation measures.

Table 1

Correlation analysis Q16 and Q13

Rank correlation methods	Variable's name	Variable's measurement	Q16	Q13
Kendall-Tau correlation coefficient, b	Q16 (belief in rumors and fake news)	*r*	1.000	0.499*
		sig. (2-sided)	-	0.000
		N	324	323
	Q13 (developing a critical attitude during the pandemic)	*r*	0.499*	1.000
		sig. (2-sided)	0.000	-
		N	323	323
Spearman correlation coefficient, Rho	Q16 (belief in rumors and fake news)	*r*	1.000	0.548*
		sig. (2-sided)	-	0,000
		N	324	323
	Q13 (developing a critical attitude during the pandemic)	*r*	0.548*	1.000
		sig. (2-sided)	0.000	-
		N	323	323

* The correlation is significant on a 0.01 level

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Therefore, hypothesis no. 1. can be accepted on a 0.01 significance level.

HYPOTHESIS NO. 2

It can be assumed that a critical person generally does not change his or her behaviour during a pandemic in a way that they refuse or oppose the mitigation measures. Hence, the hypothesis no.2 can be checked.

To test this hypothesis, the following variables were taken into consideration:

1) Q30: I am a critical person and question everything before I believe in it;

2) Q19: due the rumors and fake news spread on social media during the pandemic, I have recognized that the Covid-19 mitigation measures are more or less senseless, which is why I fail to conform with them.

Both variables are ordinally scaled on a 5-point scale. Thus, a correlation analysis according to Kendall-Tau and Spearman can be run (table 2). The correlation between Q30 and Q19 is significant on a 0.05 significance level, since the *r* is referred to be -0.100 (Kendall-Tau, b). The correlation is negative, which means the following:

The higher people rate themselves as being critical, the less they start to change their behavior during the pandemic in terms of rejecting mitigation measures.

A second check can be run by considering the variable Q18, since it can be assumed that critical persons, who question everything before believing in it, do not easily trust rumors and fake news on social media. It can be assumed that these persons mostly do fact-checking. Correlating Q18 with Q30 leads to the following results.

r according to Kendall-Tau (b) is referred to be 0.126, which indicates a high significance on a 0.01 significance level (table 3). Even *r* according to Spearman is calculated to be 0.141, which also indicates a significant relationship between Q18 and Q30 on a 0.05 significance level.

Table 2

Correlation analysis Q30 and Q19

Rank correlation methods	Variable's name	Variable's measurement	Q30	Q19
Kendall-Tau correlation coefficient, *b*	Q30 (critical person)	*r*	1.000	-0.100*
		sig. (2-sided)	-	0.043
		N	324	323
	Q19 (change of behavior)	*r*	-0.100*	1.000
		sig. (2-sided)	0.043	-
		N	323	324
Spearman correlation coefficient, *Rho*	Q30 (critical person)	*r*	1.000	-0.108
		sig. (2-sided)	-	0.053
		N	324	323
	Q19 (change of behavior)	*r*	-0.108	1.000
		sig. (2-sided)	0.053	-
		N	323	324

* The correlation is significant on a 0,05 level

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Table 3

Correlation analysis Q30 and Q18

Rank correlation methods	Variable's name	Variable's measurement	Q30	Q18
Kendall-Tau correlation coefficient, *b*	Q30 (critical person)	*r*	1.000	0.126**
		sig. (2-sided)	-	0.008
		N	324	324
	Q18 (person follows the measures)	*r*	0.126**	1.000
		sig. (2-sided)	0.008	-
		N	324	325
Spearman correlation coefficient, *Rho*	Q30 (critical person)	*r*	1.000	0.141*
		sig. (2-sided)	-	0.011
		N	324	324
	Q18 (person follows the measures)	*r*	0.141*	1.000
		sig. (2-sided)	0.011	-
		N	324	325

* The correlation is significant on a 0,05 level

** The correlation is significant on a 0,01 level

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Both correlation coefficients are positive, which means that the relationship between Q18 and Q30 is positive, too: The higher people rate themselves as a critical person, the more likely they follow Covid-19 mitigation measures.

Hence, hypothesis no. 2 can be accepted:

– on a 0.05 significance level according to the results of the correlation between Q19 and Q30 (Kendall-Tau);

– on a 0.01 significance level (Kendall-Tau) and a 0.05 significance level (Spearman) according to the correlation between Q18 and Q30.

HYPOTHESIS NO. 3

In order to check the following hypothesis, it was necessary to gather data regarding people's individual characteristics.

By means of the standardized online questionnaire, several different characteristics and attitudes of the participants could be collected. With regard to their specific characteristics, participants were asked questions, the answers to which are represented by the following variables:

– Q29: I always try to avoid risks;

– Q30: I am a critical person and question everything before I believe in it.

– The following variables were selected for further investigations:

– Q2: the economic and social consequences of the Covid-19 mitigation measures are significantly more fatal than their benefits;

– Q4: the entire package of Covid-19 mitigation measures is reasonable;

– Q21: the Covid-19 mitigation measures are in interference with civil rights and liberty and thus are unconstitutional;

– Q26: virologists and other specialists with a critical attitude against Covid-19 measures can only use social media as information channel and are quickly called a conspiracy theorists.

The dependent variable is Q16 (I believe that many of the rumors and fake news spread on social media are true). By means of a correlation analysis, the connection between Q16 and people's specific characteristics and attitudes can be investigated. Since all variables are ordinally-scaled, the *r* according to Kendall-Tau and Spearman need to be considered. The following table shows the results of the correlation between Q16 and the two variables Q29 and Q30 (table 4).

Table 4

Correlation analysis belief in rumors and specific characteristics (Q16, Q29, Q30)

Rank correlation methods	Variable's name	Variable's measurement	Q16	Q29	Q30
Kendall-Tau correlation coefficient, *b*	Q16 (belief in rumors and fake news)	*r*	1.000	-0.260*	-0.004
		sig. (2-sided)	-	0.000	0.936
		N	324	324	323
	Q29 (I always try to avoid risks)	*r*	-0.260*	1.000	0.092
		sig. (2-sided)	0.000	-	0.057
		N	324	325	324
	Q30 (I am a critical person and question everything before I believe in it)	*r*	-0.004	0.092	1.000
		sig. (2-sided)	0.936	0.057	-
		N	323	324	324

End of table 4

Rank correlation methods	Variable's name	Variable's measurement	Q16	Q29	Q30
Spearman correlation coefficient, *Rho*	Q16 (belief in rumors and fake news)	*r*	1.000	-0.290*	-0.003
		sig. (2-sided)	-	0.000	0.951
		N	324	324	323
	Q29 (I always try to avoid risks)	*r*	-0.290*	1.000	0.104
		sig. (2-sided)	0.000	-	0.061
		N	324	325	324
	Q30 (I am a critical person and question everything before I believe in it)	*r*	-0.003	0.104	1.000
		sig. (2-sided)	0.951	0.061	-
		N	323	324	324

* The correlation is significant on a 0,01 level

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Next, the results of the correlation should be considered between Q16 and the three variables Q2, Q21 and Q30 (table 5).

Table 5

Correlation analysis belief in rumors and specific characteristics (Q16, Q2, Q21, Q30)

Rank correlation methods	Variable's name	Variable's measurement	Q16	Q2	Q21	Q31
Kendall-Tau correlation coefficient, *b*	Q16 (belief in rumors and fake news)	*r*	1.000	0.311*	0.436*	0.392*
		sig. (2-sided)	-	0.000	0.000	0.000
		N	324	323	324	322
	Q2 (the economic and social consequences of the Covid-19 mitigation measures are significantly more fatal than their benefits)	*r*	0.311*	1.000	0.413*	0.345*
		sig. (2-sided)	0.000	-	0.000	0.000
		N	323	324	324	322
	Q21 (the Covid-19 mitigation measures are in interference with civil rights and liberty and thus are unconstitutional)	*r*	0.436*	0.413*	1.000	0.452*
		sig. (2-sided)	0.000	0.000	-	0.000
		N	324	324	325	323
	Q26 (virologists and other specialists with a critical attitude against Covid-19 measures can only use social media as information channel and are quickly called a conspiracy theorists)	*r*	0.392*	0.345*	0.452*	1.000
		sig. (2-sided)	0.000	0.000	0.000	-
		N	322	322	323	323

End of table 5

Rank correlation methods	Variable's name	Variable's measurement	Q16	Q2	Q21	Q31
Spearman correlation coefficient, *Rho*	Q16 (belief in rumors and fake news)	*r*	1.000	0.357*	0.494*	0.445*
		sig. (2-sided)	-	0.000	0.000	0.000
		N	324	323	324	322
Spearman correlation coefficient, *Rho*	Q2 (the economic and social consequences of the Covid-19 mitigation measures are significantly more fatal than their benefits)	*r*	0.357*	1.000	0.488*	0.416*
		sig. (2-sided)	0.000	-	0.000	0.000
		N	323	324	324	322
	Q21 (the Covid-19 mitigation measures are in interference with civil rights and liberty and thus are unconstitutional)	*r*	0.494*	0.488*	1.000	0.531*
		sig. (2-sided)	0.000	0.000	-	0.000
		N	324	324	325	323
	Q26 (virologists and other specialists with a critical attitude against Covid-19 measures can only use social media as information channel and are quickly called a conspiracy theorists)	*r*	0.445*	0.416*	0.531*	1.000
		sig. (2-sided)	0.000	0.000	0.000	-
		N	322	322	323	323

* The correlation is significant on a 0,01 level

Complied by the author on the materials of research

According to the *r* presented in the table above, only the correlation between Q16 and Q29 is highly significant on a 0.01 significance level. Both correlation coefficients are negative (-0.26 and -0,29 for Kendall-Tau and Spearman), which leads to the following conclusion. The less people try to avoid risks, the stronger they believe in rumors and fake news on social media.

As the table 4 and 5 show, all correlations which have been investigated are highly significant on a 0.01 significance level. For instance, the correlation between Q16 and Q2 shows that *r* is of 0.311 and of 0.357 (Kendall-Tau and Spearman). Since *r* are positive, the following relationship can be explained. The more likely people are convinced that the economic and social consequences of the Covid-19 mitigation measures are significantly more fatal than their benefits, the stronger they believe in rumors and fake news spread on social media.

According to the other significant correlations, the following relationships can be stated:

– the stronger people believe that the Covid-19 mitigation measures are in interference with civil rights and liberty and thus are unconstitutional, the more likely they believe in rumors and fake news spread on social media (Q21 and Q16);

– the stronger people are convinced that virologists and specialists with a critical attitude against Covid-19 measures can only use social media as information channel and are quickly called a conspiracy theorist, the more likely they believe in rumors and fake news spread on social media (Q26 and Q16).

In summary, it can be noted that specific characteristics and attitudes have an influence on the extent to which people believe in rumors and fake news spread on social media.

CONCLUSION

In conclusion, the investigations of the present study lead to the following results:

1) people who rate themselves as being a risk-seeking person show a higher tendency to believe in rumors and fake news spread on social media;

2) the more likely people are convinced that the economic and social consequences of the mitigation measures are significantly more fatal than their benefits, the stronger they believe in rumors and fake news spread on social media;

3) the stronger people believe that the Covid-19 mitigation measures are in interference with civil rights and liberty and thus are unconstitutional, the more likely they believe in rumors and fake news spread on social media;

4) the stronger people are convinced that virologists and specialists with a critical attitude against Covid-19 measures can only use social media as information channel and are quickly called a conspiracy theorist, the more likely they believe in rumors and fake news spread on social media;

5) the higher people rate themselves as being critical, the less they started to change their behavior during the pandemic;

6) the higher people rate themselves as a critical person, the more likely they follow Covid-19 mitigation measures;

7) the stronger people believe in rumors and fake news, the more likely these people developed a critical attitude towards Covid-19 mitigation measures.

Thus, specific characteristics and attitudes have an influence on the extent to which people believe in rumors and fake news spread on social media.

The present study also shows that pandemics such as the Covid-19 crisis must be seen as a serious health crisis. Not everybody agrees with the governmental mitigation measures and for some people, the side-effects predominate the positive effects of the mitigation measures. Many citizens are stressed due to the Covid-19 pandemic and the governmental mitigation measures, since both affect their psychological condition. During the Covid-19 pandemic, people are concerned about their own healthiness and the healthiness of friends and family members, which might result in a high stress level for many people. As could be shown in the present study, people have been instructed to stay at home and to isolate themselves and their family members. But not everybody did and currently follows governmental advices and/or public authorities' orders. As stated above, some people react in a way they develop a critical attitude towards governmental Covid-19 mitigation measures and/or they refuse them.

In summary, the Covid-19 pandemic presents many opportunities for scientists to study human behavior during global health crises, since it includes all countries, socio-economic groups and cultures. Everybody, independent from his or her individual attitude, characteristics or group membership is somehow affected by similar threats to his or her livelihood and health. However, people respond completely differently to these threats, as could be shown in the present study.

Finally, the Covid-19 pandemic is referred to be the most decisive event and the biggest challenge in the present, since it is able to change people's attitudes as well as their behavior. It forces organizations to react and to take measures whose effects stands the test of time. This is because most of the changes will stay, even though the immediate threat of the virus decreases with ongoing time.

It is essential to understand the potential effects of Covid-19 on human behavior, otherwise governments, health agencies and other institutions and organizations cannot react in an appropriate way. One should also keep in mind that over time, more and more people might develop a critical attitude towards the government and public authorities. The potential effects on human behavior are manifold and cannot be predicted precisely. However, some assumptions can be made, which represent target points for further research.

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