

The occurrence of psychosomatic symptoms during the coronavirus pandemics

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INTRODUCTION



In December 2019 Wuhan, China, became the center of an outbreak of COVID-19 (SARS-CoV-2 virus).



State authorities of individual countries put into place various measures to stop the spread of the SARS-CoV-2 virus.



Difficult situation influenced various aspects of human life and affects their mental and physical health.

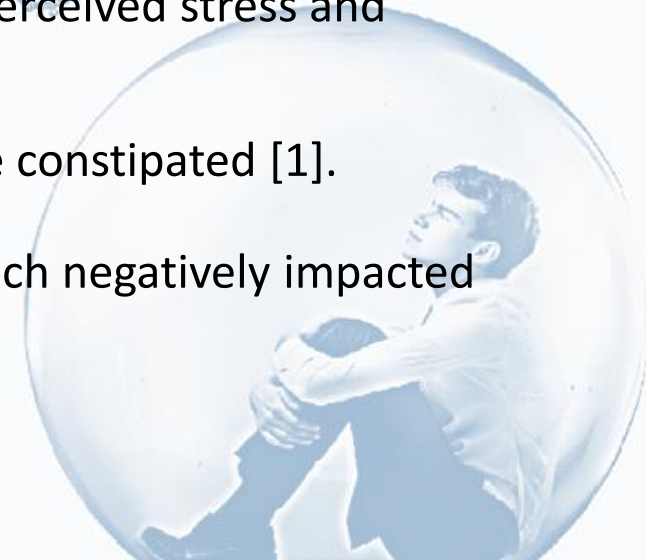


INTRODUCTION



FROM CURRENT RESEARCH:

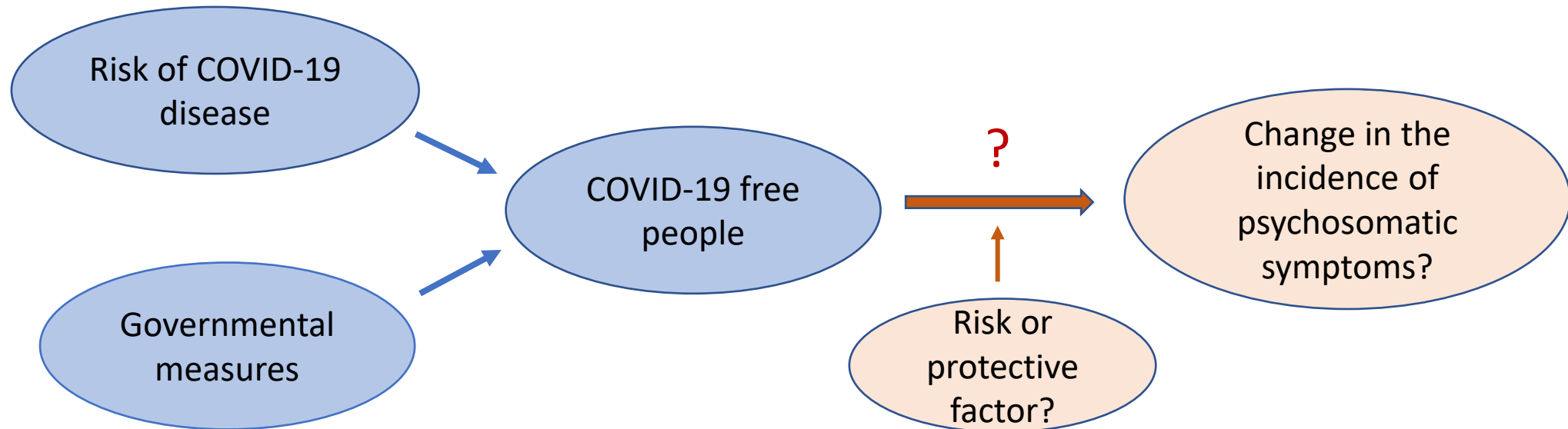
- People experienced anxiety, depression [1-5], stress [2-5], they were worried about their family members [2], afraid for no reasons and were easily upset, angry or panicked [1].
- More than half of the respondents rated the psychological impact of coronavirus pandemic as moderate or severe [2].
- Higher prevalence of symptoms of posttraumatic stress disorder and depression [6].
- A large body of research has shown significant associations between perceived stress and psychosomatic complaints [7-9].
- 7% of people felt tired for no reason, 12% had poor sleep and 7% were constipated [1].
- Levels of anxiety were significantly associated with levels of stress, which negatively impacted the quality of sleep [10].



PURPOSE


The purpose of this paper is to:


- assess a relationship between the coronavirus pandemic and an occurrence of psychosomatic symptoms that were not a direct consequence of COVID-19
- explore if there is any protective or risk factor that plays a role in this association

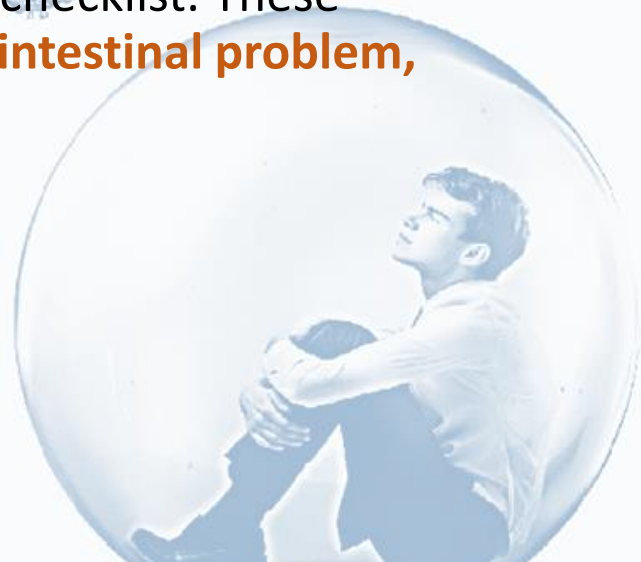


MATERIALS AND METHODS

? Anonymous online survey gathered in the Czech Republic during the coronavirus pandemic in April 2020.

 1,431 Czech adult respondents (mean age=48.15, SD=16.43, 50.6% male).

 **Health complaints** were measured using questions focused on subjective health assessment inspired by the Health Behaviour in School-aged Children (HBSC) symptom checklist. These questions explore the prevalence of nine symptoms: **headache, backache, intestinal problem, feeling low, irritability, nervousness, sleeping difficulties, dizziness.**



MATERIALS AND METHODS



Religiosity was assessed by the question: “At present, would you call yourself a believer?”



Spirituality was assessed using the Daily Spiritual Experience Scale (DSES). In the present study, an adapted 15-item version of the scale validated in the Czech environment was used.



Experiences during the pandemic were assessed by the question: “Has anything changed in your life in connection with the pandemic in the following areas?”

These areas were the feelings of: **loneliness, threat, fear and anxiety, helplessness, hope**



KEY FINDINGS

- The results showed an **increase of frequencies of psychosomatic symptoms during pandemic** compared to the normal time before it (see table 1).
- The results also showed an **increase of frequencies of negative emotions during pandemic**, compared to the normal time before it (see table 2).
- Among the **risk factors** associated with a higher risk of increased frequency of health complaints **are younger age, female gender and potentially, also high spirituality, a student status and highest achieved secondary school education** (see table 3).
- Respondents' **psychological deterioration is associated with an increased risk of health complaints** (see table 4).

TABLE 1 - The coronavirus pandemic and the incidence of health complaints

Health complaints	Decrease in prevalence of health complaints		No effect		Increase in prevalence of health complaints	
	N	%	N	%	N	%
Headache	64	4.5	1097	76.7	270	17.3
Stomach ache	43	3.0	1268	88.6	120	7.7
Backache	67	4.7	1179	82.4	183	11.7
Intestinal problem	52	3.6	1271	88.8	108	7.7
Feeling low	76	5.4	1098	76.7	257	16.5
Irritability	91	6.3	1081	75.5	259	16.6
Nervousness	100	7.1	1062	74.2	269	17.2
Sleeping difficulties	61	4.3	1208	84.4	162	10.3
Dizziness	24	1.7	1357	94.8	50	3.2
Column total	1431	100	1431	100	1431	100

TABLE 2 - The coronavirus pandemic and emotional state

Feelings	Increased negative feelings		Others	
	N	%	N	%
Loneliness	254	17.7	1177	82.3
Threat	476	33.3	955	66.7
Fear and anxiety	373	26.1	1058	73.9
Helpless	349	24.4	1082	75.6
Loss of hope	142	9.9	1289	90.1
Total	1431	100	1431	100



TABLE 3 - Associations of increased frequencies of health complaints with sociodemographic factors adjusted for age, gender and education (odds ratios – OR, and 95% confidence intervals – 95% CI)

	Headache	Stomach ache	Backache	Intestinal problems	Feeling low	Irritability	Nervousness	Sleeping difficulties	Dizziness
Age	0.98 (0.97-0.98)***	0.98 (0.97-1.00)**	1.00 (0.99-1.01)	0.99 (0.98-1.00)	0.99 (0.98-1.00)**	0.99 (0.98-1.00)**	0.99 (0.98-1.00)**	0.99 (0.98-1.00)**	0.98 (0.96-3.83)
Gender									
Male	1	1	1	1	1	1	1	1	1
Female	1.34 (1.01-1.77)*	2.19 (1.45-3.30)***	1.17 (0.85-1.62)	1.11 (0.74-1.68)	2.24 (1.67-3.01)***	1.33 (1.00-1.76)*	1.52 (1.15-2.01)**	1.34 (0.95-1.88)	2.05 (1.10-3.83)*
Highest achieved education									
Elementary school	1	1	1	1	1	1	1	1	1
Secondary vocation school	2.17 (1.20-3.92)*	0.56 (0.31-1.03)	1.04 (0.58-1.87)	0.64 (0.32-1.25)	0.79 (0.47-1.33)	1.21 (0.70-2.09)	0.87 (0.52-1.44)	0.79 (0.44-1.40)	0.47 (0.19-1.14)
Secondary school with graduation	2.16 (1.19-3.92)*	0.41 (0.22-0.77)**	0.84 (0.46-1.53)	0.84 (0.43-1.63)	0.96 (0.58-1.61)	1.29 (0.75-2.23)	1.01 (0.61-1.67)	0.71 (0.40-1.28)	0.50 (0.21-1.21)
College	1.70 (0.87-3.34)	0.53 (0.26-1.09)	1.19 (0.61-2.32)	0.61 (0.27-1.40)	1.36 (0.77-2.41)	1.81 (0.99-3.31)	1.35 (0.77-2.37)	0.93 (0.48-1.81)	0.51 (0.18-1.48)
Economic status									
Household/unemployed	1	1	1	1	1	1	1	1	1
Student	1.74 (0.87-3.50)	0.75 (0.31-1.84)	1.23 (0.52-2.90)	1.28 (0.52-3.16)	2.01 (1.01-3.99)*	2.01 (0.98-4.18)	1.55 (0.78-3.05)	2.15 (0.98-4.73)	1.50 (0.41-5.52)
Disabled/Old-aged pensioner	1.48 (0.78-2.80)	0.77 (0.35-1.72)	1.39 (0.67-2.90)	0.74 (0.31-1.77)	0.92 (0.49-1.74)	1.69 (0.87-3.27)	1.44 (0.78-2.68)	1.41 (0.65-3.03)	2.89 (0.79-10.64)
Employee	1.21 (0.73-1.99)	0.62 (0.34-1.23)	1.02 (0.56-1.84)	0.62 (0.32-1.21)	0.98 (0.61-1.58)	1.54 (0.91-2.61)	0.94 (0.58-1.52)	0.93 (0.51-1.71)	1.18 (0.42-3.34)
Self-employed	1.32 (0.62-2.81)	1.37 (0.56-1.00)	1.46 (0.62-3.44)	0.82 (0.29-2.34)	1.51 (0.73-3.12)	0.99 (0.42-2.36)	0.99 (0.46-2.15)	1.00 (0.38-2.64)	2.16 (0.47-9.85)
Marital status									
Single/Divorced/Widow(er)	1	1	1	1	1	1	1	1	1
Married/Partner relationship	1.07 (0.80-1.42)	1.01 (0.67-1.50)	0.98 (0.70-1.36)	0.81 (0.54-1.22)	0.84 (0.63-1.12)	0.77 (0.58-1.02)	0.79 (0.59-1.04)	1.07 (0.75-1.52)	1.04 (0.57-1.92)
Faith									
Non-religious	1	1	1	1	1	1	1	1	1
Religious	1.26 (0.95-1.67)	1.09 (0.73-1.62)	0.93 (0.67-1.31)	1.09 (0.72-1.65)	1.09 (0.82-1.45)	0.91 (0.68-1.21)	1.16 (0.88-1.54)	1.18 (0.83-1.66)	1.52 (0.85-2.72)
Spirituality	1.00 (0.99-1.01)	1.01 (1.00-1.02)	1.00 (0.99-1.01)	1.01 (0.99-1.02)	1.01 (1.00-1.02)	1.00 (0.99-1.01)	1.01 (1.00-1.02)	1.03 (0.99-1.01)	1.03 (1.01-1.04)**

TABLE 4 - Associations of increased frequencies of health complaints with worsened feelings adjusted for age, gender and education (odds ratios – OR, and 95% confidence intervals – 95% CI)

	Headache	Stomach ache	Backache	Intestinal problems	Feeling low	Irritability	Nervousness	Sleeping difficulties	Dizziness
Loneliness									
Others	1	1	1	1	1	1	1	1	1
Worsened	1.42 (1.02-1.98)*	1.82 (1.18-2.80)**	1.32 (0.89-1.95)	1.48 (0.92-2.37)	3.69 (2.70-5.04)***	3.42 (2.50-4.67)***	2.80 (2.05-3.82)***	1.76 (1.20-2.58)**	1.66 (0.88-3.14)
Threat									
Others	1	1	1	1	1	1	1	1	1
Worsened	1.25 (0.94-1.65)	1.19 (0.80-1.76)	1.41 (1.02-1.95)*	1.37 (0.92-2.06)	2.35 (1.77-3.11)***	2.04 (1.54-2.69)***	2.53 (1.92-3.33)***	1.97 (1.41-2.75)***	1.27 (0.71-2.28)
Fear and Anxiety									
Others	1	1	1	1	1	1	1	1	1
Worsened	1.61 (1.20-2.17)**	1.80 (1.21-2.69)**	1.33 (0.94-1.87)	1.53 (1.00-2.35)*	3.56 (2.66-4.76)***	2.72 (2.04-3.63)***	3.01 (2.26-4.00)***	2.35 (1.66-3.26)***	2.02 (1.12-3.63)*
Helpless									
Others	1	1	1	1	1	1	1	1	1
Worsened	1.27 (0.93-1.72)	1.39 (0.92-2.10)	1.12 (0.85-1.73)	1.40 (0.91-2.17)	2.72 (2.03-3.64)***	2.43 (1.81-3.25)***	2.99 (2.24-3.98)***	2.37 (1.67-3.36)***	2.46 (1.37-4.42)**
Loss of hope									
Others	1	1	1	1	1	1	1	1	1
Worsened	1.34 (0.89-2.03)	1.25 (0.71-2.21)	1.04 (0.62-1.75)	1.42 (0.79-2.54)	2.10 (1.42-3.11)***	2.48 (1.69-3.64)***	2.05 (1.39-3.02)***	1.99 (1.26-3.14)**	1.28 (0.562-93)

Notes: *p < 0.05, **p < 0.01, ***p < 0.001; after using Bonferroni correction, only p-values below 0.01 are considered significant and are shown in bold.

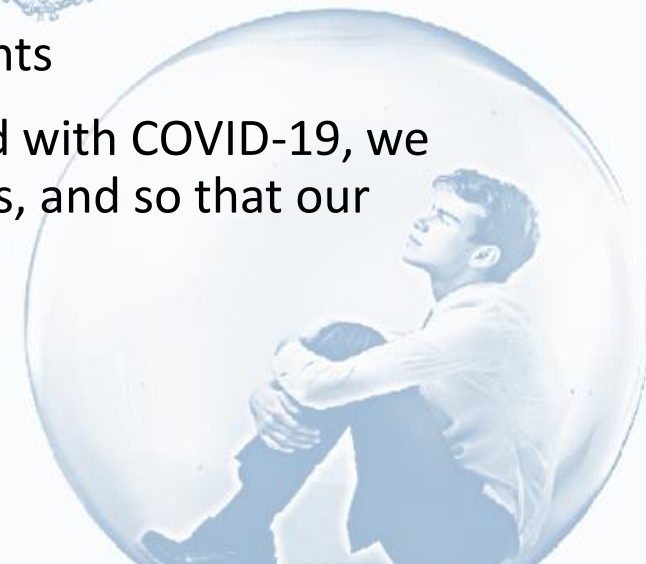
IMPLICATIONS

- Based on sociodemographic information, we identified women, youngsters, highly spiritual people and potentially student and people with highest achieved secondary school education as vulnerable groups, so it is important to maximize support and provide them with early psychological interventions.
- Our research results are of a great practical significance and can be immediately applied to optimize the response to similar future situations as well as the long-term effect of the current pandemic.



RESEARCH STRONG AND LIMITATION

- ⊕ One of the first studies examining the association of psychosomatic health complaints with the coronavirus pandemic to such a wide extent.
- ⊕ The study captures the state of health complaints of respondents at the most critical time of the first wave of the coronavirus pandemic and compares it with the self-reported state before the pandemic.
- ⊕ A large sample that is close to a national sample characteristics regarding age and gender.
- ⊖ Information bias, because the data are based on self-reports of the participants
- ⊖ Although we excluded respondents who stated that they had been diagnosed with COVID-19, we cannot be sure that our cohort surely included only COVID-19-free individuals, and so that our observed health complaints are only of psychosomatic origin.
- ⊖ Design does not allow us to come to conclusions on causality.



CONCLUSION

Our findings suggest that the coronavirus pandemic and associated government measures could have a significant influence on the prevalence of health complaints and the emotional state of people.



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