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Mental health risk factors during the COVID-19 pandemic in the Polish population

Abstract

Introduction: The level of post-traumatic stress symptoms (PTSS) associated with the early stages of the COVID-19 outbreak, stress, anxiety, and depressive symptoms was assessed. Risk factors for mental health in the Polish population have been identified.

Material and methods: Nine hundred and twenty-six respondents completed a set of questionnaires consisting of questions concerning COVID-19, PTSS related to the COVID-19 outbreak (Impact of Event Scale-Revised, IES-R), and their mental health status (Depression, Anxiety and Stress Scale, DASS-21).

Results: Most respondents reported severe PTSS related to the COVID-19 outbreak (44.06%), the normal intensity of depressive symptoms (52.38%), anxiety symptoms (56.05%), and stress (56.48%). Almost 20% of Polish respondents were characterized by a severe or extremely severe level of stress, anxiety, or depressive symptoms. Every seventh respondent reported an extremely severe level of depressive symptoms. Female gender, parental status, having a relationship, at least a two-person household were associated with higher PTSS or DASS-21 subscales. A few physical symptoms, a medical visit, quarantine, negative health evaluation, chronic diseases, knowledge about the increase in the number of infected people or deaths were associated with higher levels of PTSS. Some of the precautions and the need for additional information on COVID-19, the certainty of a high COVID-19 contracting probability or of a low survival rate, and concerns about the loved ones were associated with higher PTSS.

Conclusions: The indicated risk factors can be used for developing psychological interventions to improve mental health. It is necessary to conduct qualitative research on the psychological reasons for the occurrence of mental symptoms during the pandemic.

Key words: coronavirus disease, COVID-19, pandemic, stress, depressive symptoms, anxiety symptoms, post-traumatic stress symptoms, mental health, risk factors

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Introduction

According to the World Health Organization (WHO), the most significant psychological effects of the COVID-19 pandemic are increased levels of stress and anxiety [1]. The WHO emphasizes that an increase in loneliness, depression, alcohol, and drug abuse as well as self-harm or suicidal behavior may be observed in the nearest future [1]. Social isolation and quarantine have positive effects on the epidemiological situation, but the negative ones for mental health [2]. The situation is aggravated by social stigma related to COVID-19 [3].

In China, research has been conducted regarding psychosocial functioning and the identification of risk groups in the general population. Huang and Zhao showed that the percentages of anxiety, depression, and poor-quality sleep were 35.1%, 20.1%, and 18.2% respectively in the study on a sample consisting of 7236 people [4]. No statistically significant differences were found in the level of anxiety, depression, and sleep quality between men and women. The influence of age on the occurrence of anxiety and depressive symptoms was observed. It turned out that young people up to 35 years old reported these symptoms more often than people over 35. Focusing on information about COVID-19 for more than three hours a day led to an increased level of anxiety symptoms. Healthcare workers were characterized by high levels of anxiety, depression, and poor sleep quality compared to other professions [4]. Sun et al. indicated that female gender, close contact with COVID-19 infected patients, living in cities with large numbers of infections, and sleep problems were risk factors for severe posttraumatic stress disorder. There was no impact of age or education on the development of PTSS [5]. Qian et al. [6] found that gender, age, education, employment, or marital status are not statistically significantly related to the level of anxiety during the COVID-19 pandemic, whereas low economic status and the suspicion of infected cases in the neighborhood as well as the disorientation caused by COVID-19 information increased the level of anxiety significantly. Wang, Di, Ye, and Wei confirmed that women were at a greater risk of anxiety during the COVID-19 pandemic [7]. Education level and occupation were associated with depressive symptoms. Those with a bachelor's degree were less likely to be depressed than those with a master's degree or higher [7]. In the United States, a study has been conducted which reported that younger age and a higher level of education are associated with a higher fear of SARS-CoV-2 coronavirus [8].

In times of uncertainty and instability, where security needs are met to a much lesser extent, identifying risk factors of poor mental health during the pandemic as well as the most mentally vulnerable groups in society are important areas of research to develop credible psychological support programs during the COVID-19 pandemic.

The aim of the study is to assess the posttraumatic stress symptoms (PTSS) associated with the early stages of the COVID-19 outbreak, to determine the level of stress, anxiety, and depressive symptoms, and to identify risk factors for mental health in the Polish population. It is a replication of the study conducted in China by Wang et al. [9].

Material and methods

Research participants

The survey was completed by 926 people (78.51% women). The average age of the respondents was 35.15 years (SD = 12.53). The highest percentage of the respondents (40.06%) lived in large cities with more than 100 thousand inhabitants, followed by 23.76% living in rural areas, 22.89% in medium-sized towns up to 100 thousand inhabitants. The remaining people lived in small towns with up to 20 thousand inhabitants. 46.44% of the respondents had secondary education, 44.06% – higher, 6.59% – vocational, and 2.92% had primary education. Among the respondents, the majority were married (43.09%), then 30.13% were living common-law, 19.01% were single, 5.62% were divorced and, 2.16% were widowed. Most of the respondents worked professionally (54.75%), 21.17% were unemployed, people working and studying at the same time made up 11.45% of the sample, 6.37% were self-employed or taking care of children at home, 5.29% were retired, whereas 0.97% were students. A significant percentage of the respondents described their socioeconomic status as good (46.33%), 39.09% as average, 10.69% as very good, 3.33% as bad, and 0.54% as very bad.

Research tools

The set of questionnaires used in the study corresponds to the one proposed by Wang et al. [9]. The Polish adaptation of the Impact of Event Scale (IES-R) was used to determine the current PTSS caused by traumatic events [10]. The scale consists of 22 items and contains three subscales: (1) intrusion, which expresses recurring images, dreams, thoughts, or perceptions associated with a traumatic event; (2) hyperarousal, characterized by increased vigilance, anxiety, impatience, difficulty in focusing attention; (3) avoidance, manifested by efforts to get rid of thoughts, emotions or conversations associated with a traumatic event. In this study, the value of Cronbach's α coefficient for the overall result was 0.73.

The Depression Anxiety Stress Scale (DASS-21) was developed by Lovibond and Lovibond [11]. The scale consists of 21 items, which are components of three subscales: depression, anxiety, and stress. The Depression scale assesses dysphoria, hopelessness, devaluation of life, self-deprecation,

lack of interest/involvement, anhedonia, and inertia. The Anxiety scale assesses autonomic arousal, skeletal muscle effects, situational anxiety, and subjective experience of anxious affect. The Stress scale assesses difficulty relaxing, nervous arousal, and being easily upset/agitated, irritable/over-reactive, and impatient [11]. In this study, the value of Cronbach's α coefficient for the depression, anxiety, and stress subscale were 0.92, 0.91, 0.93, and 0.97 for the overall result.

The survey was conducted during the early stages of the COVID-19 outbreak within 14 days from 25 March 2020 to 7 April 2020, using the Google Forms platform.

Statistical analysis

Descriptive statistics have been calculated for socio-demographic data, physical symptoms and health care confidence, history of contact with infected objects, knowledge, and concerns about COVID-19, precautionary measures against COVID-19 applied in the previous 14 days and additional information required concerning COVID-19. The results of the IES-R and DASS-21 subscale have been expressed as an average and standard deviation. Linear regressions have been used to calculate one-dimensional correlations between socio-demographic data, physical symptoms and health care trust, history of contacts with infected objects, knowledge, and concerns about COVID-19, precautionary measures against COVID-19 in the previous 14 days, additional information required concerning COVID-19 and the IES-S result, as well as the DASS-21 subscale. Two-tailed tests with a significance level of $p < 0.05$ have been applied. Statistical analysis has been conducted in Statistica 13.3.

Results

Descriptive statistics

Among the respondents, the highest percentage (44.06%) were those with severe PTSS related to the COVID-19 outbreak. A normal level of PTSS was observed in 36.61% of the examined sample, in 13.17% – mild, and a moderate one in 6.16% of respondents. The average result on the subscale of depression, anxiety, and stress was 35.89 (SD = 33.74). Among the respondents, 52.38% showed the normal intensity of depressive symptoms, 15.98% – moderate, and 10.37% – mild. An extremely severe score of depressive symptoms concerned 14.25% of the respondents, whereas a severe one – 7.02%. On the subscale of anxiety in DASS-21, its normal level was shown by 56.05% of respondents, extremely severe anxiety by 20.62%, 12.20% showed a moderate one, 6.26% – severe, 4.86% – mild. In the group of respondents, 56.48% showed a normal stress intensity, 12.85% – moderate, 11.66% – severe, 9.61% – extremely severe, and 9.40% did mild.

Socio-demographic characteristics

Demographic characteristics are presented in Table 1. Male gender was significantly associated with lower PTSS, stress, and depressive symptoms. The age of 18–20 was also associated with lower PTSS. Having a child was associated with higher PTSS. Being single was associated with lower PTSS, but with a higher level of anxiety and depressive symptoms. Those living common-law were associated with a higher score of anxiety and depressive symptoms. However, marriage was associated with higher symptoms of depression levels. A household consisting of at least two members was associated with higher PTSS. Detailed results are presented in Table 1.

Symptoms of COVID-19

The percentage of various symptoms is presented in Table 2.

It is observed that the occurrence of chills, headache, myalgia, cough, breathing difficulty, dizziness, coryza, and sore throat were associated with higher PTSS.

Health status

Clinic consultations and imposing quarantine by the health authority were shown to be associated with higher PTSS. Poor, very poor or average self-rated health status and chronic illness were significantly associated with higher PTSS (Table 2).

COVID-19 contact history

The analysis showed that contact with a person with COVID-19 suspicion or an infected object was associated with lower depressive symptoms (Table 3).

Knowledge about COVID-19

Individuals who claimed that contact with infected objects is not a potential COVID-19 transmission route have lower PTSS and anxiety symptoms. Knowledge about the increase in the number of infections and deaths was associated with higher PTSS. People who received information through television had higher PTSS (Table 4).

Concerns about COVID-19

Those who had no confidence in their own doctor’s ability to diagnose or recognize COVID-19 were significantly more likely to have higher PTSS.

A higher perceived likelihood of contracting COVID-19 was significantly associated with higher PTSS. The strong belief in a high survival rate for COVID-19 infection was associated with lower PTSS. Numerous concerns about the incidence of relatives getting infected were associated with higher PTSS. Detailed results are presented in Table 4.

Precautionary measures and additional health information required

Covering the mouth while coughing or sneezing did not correlate with PTSS or depression, anxiety, and stress levels. Wearing a mask was correlated with lower anxiety symptoms levels. Washing hands immediately after coughing, sneezing, or rubbing the nose was significantly associated with a higher PTSS level. Washing hands after touching contaminated objects contributed to lower depressive symptoms.

Staying at home from 0 to 9 hours due to COVID-19 was associated with lower PTSS levels whereas spending 10 to 19 hours a day at home was related to lower anxiety symptoms.

Each aspect of the need for additional information on COVID-19 was linked to higher PTSS levels. The obtained results are presented in Table 5.

Discussion

Respondents from Poland were characterized by a much higher average severity of stress, anxiety, and depressive symptoms and slightly higher indicators of PTSS associated with the COVID-19 outbreak compared to the Chinese [9]. These results can probably be explained by the Chinese's previous experience during the 2003 SARS-CoV epidemic, which was halted by syndromic surveillance, quarantine, and other methods that are now being widely used to stop the COVID-19 pandemic [12].

Almost every fifth respondent from Poland reported severe and extremely severe levels of stress, anxiety, and depressive symptoms. The most serious case concerns depression, as every seventh respondent reported extremely severe depressive symptoms. To resolve the issue of psychological support, it is important to conduct research to discover the psychological meaning of the symptoms: What is the reason of depression? Which emotional experience and thoughts are the base of its development during the COVID-19 outbreak? Such kind of research could make it possible to distinguish the essence of problematic issues connected with mental health during the COVID-19 pandemic in various social groups. This is particularly important due to the serious effects of depressive symptoms for both psychological and economic reasons.

Psychological traumatization is a natural process during the COVID-19 outbreak. Almost every second respondent from Poland was characterized by severe PTSS caused by the COVID-19 breakout. Similar results were observed among the Chinese [9].

The role of socio-demographic variables for mental health during the pandemic

The study shows that the male gender was significantly associated with lower levels of stress, depressive symptoms, and PTSS related to the COVID-19 outbreak. The study in China also highlights the fact that the female gender was at a significantly higher risk of posttraumatic stress [5, 13] or anxiety during the COVID-19 pandemic and H1N1 swine flu [7]. This indicates that women are less able to cope with psycho-emotional problems and are more likely to feel mental discomfort during the COVID-19 pandemic.

The study did not reveal any effect of age on stress, anxiety, and depressive symptoms. Only the age between 18 and 20 was significantly correlated with lower PTSS levels. Among the Chinese, no effect of age on stress, anxiety, and depressive symptoms and PTSS was observed either [5, 9]. However, other Chinese researchers have pointed out that young people between 18 and 30 years old and people over 60 experienced a lot of psycho-emotional problems related to the COVID-19 pandemic [14]. Ahmed et al. noted that people aged 18 to 40 have more explicit psychological problems associated with COVID-19, including alcohol consumption [15]. It turned out that age did not make any difference for the intensity of stress, anxiety, and depressive symptoms among Polish respondents.

The single and living common-law statuses were significantly associated with higher depressive and anxiety symptoms. Being married was associated with higher depressive symptoms. The status of a parent was associated with higher PTSS levels. The study clearly showed that the level of PTSS raises with the increase in the number of people in the family (household). This is probably related to the interaction between family members. Staying at home during social isolation and talking about COVID-19 in the family leads to the accumulation of the mental discomfort effect caused by the COVID-19 outbreak.

Unemployed people were characterized by higher levels of stress, anxiety, and depressive symptoms compared to employed people and students. This is probably due to a sense of economic danger. The development of psychological and economic support programs for these people is particularly important to ensure public safety.

To sum up, among the socio-demographic variables, such as gender, civil status, number of people in the household, parental, and professional status were important predictors of psycho-emotional problems, whereas age and education were not relevant.

The influence of health status on mental health during the pandemic

All physical symptoms included in this study were directly related to COVID-19, which is likely to determine their particular significance in aggravating feelings of discomfort. The subjects, learning about the symptoms of COVID-19, pay more attention to them, which may, in turn, increase the risk of traumatization. Compared to the original study [9], no correlation was found between the occurrence of these symptoms and stress, anxiety, or depressive scores. It can be cautiously assumed that respondents from Poland were less mentally sensitive to the appearance of somatic symptoms compared to the Chinese.

A higher level of PTSS was associated with being under quarantine, having consulted a doctor in a medical clinic, assessing one's health as poor, very poor, or average, and having chronic diseases. None of these variables was associated with the levels of stress, anxiety, or depressive symptoms. It is believed that the elderly and people with chronic diseases are at a greater risk of severe COVID-19. Medical care services should pay special attention to the psychological functioning of people with these characteristics. It is particularly important for people at high risk to feel more secure and not to give in to unnecessary adverse effects. The specificity of informing the public seems to be important for social behavior.

Thus, the occurrence of some physical symptoms (chills, headache, myalgia, cough, breathing difficulty, dizziness, coryza, and sore throat) and being in quarantine, having consulted a doctor in a clinic, assessing one’s health as poor, very poor or average and having chronic diseases were significantly correlated with higher PTSS levels associated with the COVID-19 outbreak. The above-mentioned factors were not significantly associated with stress, anxiety, and depressive symptoms. Hospitalization, testing for COVID-19 as well as close or indirect contact with either an individual or materials infected with COVID-19 were not associated with PTSS, stress, anxiety, or depressive symptoms (only contact with an individual with a COVID-19 suspicion or infected materials was related to lower depressive symptoms).

The need for additional information on COVID-19 and mental health during COVID-19

For almost 70% of Polish respondents, the main source of information on COVID-19 was the Internet (compared to 93.5% among the Chinese [9]), a significant percentage of them obtained information from television (almost 21%). Receiving information from television was associated with higher PTSS levels. Seeking information on COVID-19 on TV is probably connected with watching news that appear regularly (every hour or more often). People who watch TV are less autonomous than ones who

derive information from the Internet because they cannot choose the content of news and they have to consume the information which is offered by social media.

During the pandemic, the desire for additional information indicates the healthy position of citizens and concern for their health. In the case of respondents from Poland, there was no impact of the need for additional information concerning COVID-19 on the development of stress, anxiety, and depressive symptoms. The knowledge about the increase in the number of the infected and the number of deaths was associated with higher PTSS levels. Regarding negative psycho-emotional symptoms, it is worth referring to the study by Li et al. [16], who noted that the perceived severity of COVID-19 was related to psycho-emotional problems, but paradoxically, it increased public participation in the prevention and precautionary measures.

The study showed that people who were distanced from the information on COVID-19 and took COVID-19 with less seriousness experienced less mental discomfort. However, it is important to determine whether these people will also take responsible precautions. In the case of people with minor symptoms of mental trauma and high responsibility towards COVID-19, it is worth analyzing what aspects of cognitive functioning or which personality traits can provide an adequate approach towards COVID-19. For example, Carvalho, Pianowski, and Gonçalves [17] concluded that conscientiousness as a personality trait was positively associated with adhering to the recommended appropriate social distancing and frequent hand washing, whereas extraversion was negatively associated with abiding by certain principles of social distancing during the COVID-19 pandemic.

In conclusion, the need for additional information on COVID-19 was associated with higher PTSS levels.

Precautions and mental health during the pandemic

At the time of conducting the survey, the level of knowledge and the precautions taken concerning COVID-19 can be considered sufficiently high. From a psychological point of view, it can be noted that wearing masks as a previously unapplied precautionary measure has a twofold effect: on the one hand, wearing masks increases the level of psychological traumatization, but on the other hand, it leads to a reduction in stress and anxiety symptoms. It is likely that the development of the sense of safety when wearing masks helps to reduce these symptoms.

During the early phase of the COVID-19 outbreak, almost two-thirds of Polish respondents stayed at home between 20 and 24 hours a day, and almost every fourth respondent did for 10-19 hours. The results of the survey showed that the majority of Polish respondents adapted to the ban on leaving

home (lockdown) in addition to the permitted daily necessities. Staying at home from 0 to 9 hours a day was associated with a lower psychological impact of the pandemic outbreak.

It was not found that people under quarantine differed significantly in the severity of stress, anxiety, and depressive symptoms, but they were characterized by a higher intensity of PTSS related to the COVID-19 outbreak.

In conclusion, almost all prevention measures were correlated with higher PTSS levels associated with the COVID-19 outbreak.

The link between concerns for COVID-19 and mental health during the pandemic

The results of this study on concerns about COVID-19 are consistent with the results of the study conducted by Xu et al. [13] who concluded that concerns about the H1N1 pandemic were important predictors of PTSS in students. Similar conclusions were presented in the research by Wang et al. [9].

It is worth noting that in the Polish study there were no statistically significant correlations between fear of infection and the DASS-21 subscales of stress, anxiety, and depression in comparison with the original study by Wang et al. [9]. Lower or no concerns were associated with significantly lower levels of PTSS related to the COVID-19 outbreak. The belief that COVID-19 infection is very likely and survival in case of infection is not very probable was associated with increased PTSS levels. It is likely that these relatively extreme positions can be described by means of self-control. The study by Li, Yang, Dou, and Cheung [18] stressed that there was a link between perceived seriousness towards COVID-19 and mental health problems that are moderated by self-control. Individuals with low self-control were more vulnerable psychologically to COVID-19. Self-control was negatively correlated with mental health problems and the perceived severity of COVID-19 was correlated positively with mental health problems [18]. It is likely that, on the one hand, it is necessary to provide people with information in such a way as not to cause excessive fear and panic, which paralyze the mind. On the other hand, it is necessary to keep in mind that this information should shape people's responsible behavior and their own sense of control during the COVID-19 pandemic. Fear and anxiety can play a dual role, both helping people in difficult situations and disturbing them. Qian et al. [6] have shown the presence of such dual effects. The perception of higher risks and dangers of COVID-19 was positively related to safety and precautionary measures, but at the same time led to an increase in the level of anxiety symptoms among the population [6].

In conclusion, greater concern about COVID-19 was significantly associated with higher PTSS levels caused by the COVID-19 outbreak, and less concern or lack of concern was associated with lower PTSS levels.

Limitations and strengths of the research

Some limitations should be noted. Firstly, an uneven sample structure was observed, e.g., the predominance of women over men. Secondly, psychological methods based on self-report have been used, which may not be fully reliable for assessing mental health. Thirdly, the study has cross-sectional design, which does not allow concluding about the direct impact of the COVID-19 outbreak on the mental health of Polish respondents.

The strengths of the research should also be noted. Firstly, the study was conducted at the earliest stages of the COVID-19 outbreak development in a large sample. Secondly, the results of the study are valuable in terms of analyzing a wide range of COVID-19 issues. It is worth noting that these results can be referred to the findings of the original study conducted in China [9], which will allow to understand the psychological reactions of society to the COVID-19 outbreak in different cultures. Thirdly, these results may describe the specificity of the acute psychological response of the Poles to medical disasters and in general emergencies. The mental health risk factors highlighted in the study can be taken into account in the future, namely in case of emergency situations, which will make it possible to respond to them in a more effective way.

Conclusions

1. Almost 20% of Polish respondents were characterized by a severe or extremely severe level of stress, anxiety, or depressive symptoms. Every seventh respondent reported an extremely severe level of depressive symptoms. Almost every second respondent from Poland was characterized by a severe PTSS caused by the COVID-19 outbreak.
2. Women, families with a household of at least two people, individuals with parental status, unemployed ones, and people with poor health and chronic diseases experienced more psycho-emotional problems during the pandemic.
3. The occurrence of most physical symptoms directly associated with COVID-19 and quarantine was correlated with higher PTSS.
4. The need for additional information on COVID-19, implementing prevention measures, and increased concerns were significantly associated with increased PTSS levels related to the COVID-19 outbreak.
5. It is necessary to conduct *qualitative research* on the *psychological reasons for the occurrence of mental symptoms* during the pandemic, in particular depressive and anxiety symptoms, and to highlight

the content of mental health problems in different social groups, especially in the risk groups identified in this study, to develop psychological support programs.

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Table 1. Correlation between demographic variables and the posttraumatic stress symptoms related to the COVID-19 outbreak as well as the adverse mental health status during the pandemic (N = 926)

		PTSS [a]		Stress [b]		Anxiety [b]		Depression [b]	
Variables	**N (%)**	**R^2 (AR^2)**	**β (95% CI)**	**R^2 (AR^2)**	**β (95% CI)**	**R^2 (AR^2)**	**β (95% CI)**	**R^2 (AR^2)**	**β (95% CI)**
Gender									

Male	199 (21.49)	0.11 (0.11)	–0.34*** (–0.40 to –0.27)	0.007 (0.006)	–0.09** (–0.15– to –0.02)	0.004 (0.003)	–0.06 (–0.12 to 0.01)	0.005 (0.004)	–0.07* (–0.13 to –0.01)
Female	727 (78.51)		Ref.		Ref.		Ref.		Ref.
Age (years)									
18–20	89 (9.29%)		–0.22* (–0.39 to –0.05)		–0.02 (–0.20 to 0.15)		–0.02 (–0.20 to 0.15)		–0.02 (–0.19 to 0.16)
20–30	313 (33.80)		–0.09 (–0.20 to 0.01)		0.01 (–0.09–0.12)		0.04 (–0.07do 0.14)		0.02 (0.09 to 0.12)
30–40	248 (26.78)	0.004 (0.003)	–0.09 (–0.20 to 0.03)	< 0.001 (< 0.001)	–0.06 (–0.17 to 0.06)	0.002 (0.001)	–0.05 (–0.17 to 0.06)	< 0.001 (< 0.001)	–0.06 (–0.17 to 0.06)
40–50	154 (16.63)		–0.01 (–0.15 to 0.13)		–0.08 (–0.22 to 0.06)		–0.09 (–0.23 to 0.05)		–0.05 (–0.19–0.09)
50–60	83 (8.96)		–0.07 (–0.25 to 0.10)		0.06 (–0.11 to 0.24)		0.04 (–0.14 to 0.22)		0.03 (–0.15 to 0.21)
>60	42 (4.54)		Ref.		Ref.		Ref.		Ref.
Parental status									
Have a child of 16 years old or younger	349 (37.69)		0.16*** (0.09 to 0.23)		–0.05 (–0.12 to 0.02)		–0.05 (–0.12 to 0.02)		–0.06 (–0.13 to 0.02)
Have a child older than 16 years old	138 (14.90)	0.02 (0.02)	0.15*** (0.07 to 0.24)	< 0.001 (–0.001)	0.01 (–0.07 to 0.09)	0.002 (< 0.001)	–0.04 (–0.12 to 0.05)	< 0.001 (–0.001)	0.01 (–0.08 to 0.09)
Have both children under and over 16 years old	30 (3.24)		0.09 (–0.01 to 0.18)		0.01 (–0.08 to 0.11)		–0.03 (–0.12 to 0.06)		0.01 (–0.09 to 0.10)
Have no children	409 (44.17)		Ref.		Ref.		Ref.		Ref.
Marital status									
Single	176 (19)		–0.19** (–0.33 to –0.05)		0.11 (–0.03 to 0.25)		0.15* (0.01 to 0.29)		0.15* (0.01 to 0.29)
Living common–law	279 (30.13)	0.005 (0.004)	–0.09 (–0.20 to 0.02)	< 0.001 (–0.001)	0.11 (–0.01 to 0.22)	< 0.001 (–0.001)	0.13* (0.02 to 0.25)	< 0.001 (< 0.001)	0.13* (0.02 to 0.24)
Married	399 (43.09)		–0.06 (–0.15 to 0.04)		0.07 (–0.03 to 0.17)		0.10 (< –0.001 to 0.19)		0.10* (< 0.001 to 0.19)
Divorced	52 (6.62)		Redundancy [c]		Redundancy [c]		Redundancy [c]		Redundancy [c]
Widowed	20 (2.16)		Ref.		Ref.		Ref.		Ref.
Household size									
Six people or more	55 (5.94)		0.26** (0.09 to 0.43)		0.10 (–0.07 to 0.27)		0.10 (–0.07 to 0.27		0.11 (–0.06 to 0.29)

Three to five people	553 (59.72)	0.001 (< 0.001)	0.13** (0.05 to 0.21)	0.001 (< 0.001)	0.04 (–0.04 to 0.11)	0.004 (0.002)	0.06 (–0.02 to 0.14)	0.002 (0.001)	0.04 (–0.03 to 0.12)
Two people	241 (26.03)		0.12* (0.01 to 0.23)		0.07 (–0.04 to 0.18)		0.10 (–0.01 to 0.21)		0.09 (–0.02 to 0.20)
One person	77 (8.32)		Ref.		Ref.		Ref.		Ref.
Employment status									
Unemployed	196 (21.17)		0.04 (–0.04 to 0.11)		0.12*** (0.06 to 0.20)		0.17*** (0.10 to 0.24)		0.11** (0.04 to 0.19)
Retired	49 (5.29)		0.04 (–0.04 to 0.12)		0.04 (–0.05 to 0.12)		0.03 (–0.05 to 0.12)		0.04 (–0.04 to 0.12)
Student	9 (0.97)	< 0.001 (< 0.001)	–0.09* (–0.18 to –0.01)	0.001 (< 0.001)	–0.01 (–0.09 to 0.08)	0.002 (< 0.001)	0.01 (–0.08 to 0.09)	0.002 (< 0.001)	0.03 (–0.06 to 0.12)
Working student	106 (11.45)		–0.04 (–0.13 to 0.02)		0.04 (–0.04 to 0.20)		0.05 (–0.02 to 0.13)		0.04 (–0.03 to 0.12)
Other (e.g., maternity leave)	59 (6.37)		0.01 (–0.07 to 0.09)		0.04 (–0.05 to 0.12)		0.03 (–0.05 to 0.11)		0.04 (–0.04 to 0.12)
Employed	507 (54.75)		Ref.		Ref.		Ref.		Ref.
Educational attainment									
Primary school	27 (2.92)		0.03 (–0.06 to 0.12)		0.04 (–0.06 to 0.13)		0.05 (–0.05 to 0.14)		0.01 (–0.08 to 0.11)
Vocational education	61 (6.59)	< 0.001 (< 0.001)	0.07 (–0.02 to 0.16)	0.001 (< 0.001)	–0.02 (–0.11 to 0.07)	0.002 (0.001)	–0.04 (–0.13 to 0.05)	0.001 (< 0.001)	–0.03 (–0.13 to 0.06)
Secondary education	430 (46.44)		–0.02 (–0.09 to 0.04)		0.04 (–0.02 to 0.11)		0.06 (–0.01 to 0.13)		0.05 (–0.02 to 0.12)
Higher education	408 (44.06)		Ref.		Ref.		Ref.		Ref.

* $p < 0.05$; ** $p < 0.01$; $p < 0.001$

AR^2, Adjusted R–Squared; CI, confidence interval; N, number; Ref., reference

[a] Posttraumatic stress symptoms were measured using the Impact of Event Scale-Revised (IES-R)

[b] Depression, Anxiety, and Stress were measured using the Depression Anxiety Stress Scale (DASS-21)

[c] The predictors did not exceed the tolerance value

Table 2. Correlation between physical health status in the previous 14 days and the posttraumatic stress symptoms related to the COVID-19 outbreak as well as adverse mental health status during the pandemic (N = 926)

		PTSS [a]		Stress [b]		Anxiety [b]		Depression [b]	
Variables	**N (%)**	**R^2 (AR^2)**	**β 95% CI)**	**R^2 (AR^2)**	**β (95% CI)**	**R^2 (AR^2)**	**β (95% CI)**	**R^2 (AR^2)**	**β (95% CI)**
Persistent fever (> 38°C for at least 1 day)									
Yes	20 (2.16)	0.001 (< 0.001)	0.03 (–0.04 to 0.09)	< 0.001 (0.001)	–0.01 (–0.08 to 0.05)	0.001 (< 0.001)	–0.03 (–0.09 to 0.04)	< 0.001 (0.001)	#POLE! (–0.08 to 0.05)
No	906 (97.84)		Ref.		Ref.		Ref.		Ref.
Chills									
Yes	75 (8.10)	0.006 (0.005)	0.08* (0.01 to 0.14)	0.001 (0.001)	0.03 (–0.03 to 0.10)	< 0.001 (–0.001)	0.01 (–0.05 to 0.08)	0.002 (0.001)	0.04 (–0.02 to 0.10)
No	851 (91.90)		Ref.		Ref.		Ref.		Ref.
Headache									
Yes	475 (51.30)	0.041 (0.040)	0.20*** (0.14 to 0.27)	0.001 (< 0.001)	0.03 (–0.03 to 0.10)	0.001 (–0.001)	0.02 (–0.04 to 0.09)	0.002 (0.001)	0.05 (–0.02 to 0.11)
No	451 (48.70)		Ref.		Ref.		Ref.		Ref.
Myalgia									
Yes	161 (17.39)	0.017 (0.016)	0.13*** (0.07 to 0.19)	0.001 (< 0.001)	0.03 (–0.04 to 0.09)	0.001 (0.001)	0.02 (–0.04 to 0.09)	< 0.001 (–0.001)	0.01 (–0.06 to 0.07)
No	765 (82.61)		Ref.		Ref.		Ref.		Ref.
Cough									
Yes	289 (31.21)	0.012 (0.011)	0.11*** (0.05 to 0.17)	0.002 (0.001)	–0.05 (–0.11 to 0.02)	0.002 (0.001)	–0.05 (–0.11 to 0.02)	0.004 (0.002)	–0.06 (–0.13 to 0.003)
No	637 (68.79)		Ref.		Ref.		Ref.		Ref.
Breathing difficulty									
Yes	80 (8.64)	0.030 (0.029)	0.17*** (0.11 to 0.24)	< 0.001 (0.001)	–0.01 (–0.07 to 0.05)	< 0.001 (–0.001)	–0.01 (–0.07 to 0.06)	0.001 (–0.001)	–0.01 (–0.08 to 0.05)
No	846 (91.36)		Ref.		Ref.		Ref.		Ref.
Dizziness									
Yes	130 (14.04)	0.022 (0.021)	0.15*** (0.08 to 0.21)	0.002 (0.001)	0.04 (–0.02 to 0.11)	< 0.001 (–0.001)	0.02 (–0.04 to 0.09)	0.003 (0.001)	0.05 (–0.01 to 0.12)
No	796 (85.96)		Ref.		Ref.		Ref.		Ref.
Coryza									
Yes	342 (36.93)	0.006 (0.005)	0.08** (0.01 to 0.14)	< 0.001 (–0.001)	–0.02 (–0.09 to 0.04)	< 0.001 (–0.001)	0.01 (–0.05 to 0.08)	0.001 (< 0.001)	–0.02 (–0.09 to 0.04)
No	584 (93.07)		Ref.		Ref.		Ref.		Ref.

Sore throat									
Yes	296 (31.97)	0.019 (0.018)	0.14*** (0.08 to 0.20)	0.001 (< 0.001)	–0.03 (–0.10 to 0.03)	< 0.001 (–0.001)	–0.01 (–0.07 to 0.06)	< 0.001 (–0.001)	< 0.001 (–0.06 to 0.06)
No	630 (68.03)		Ref.		Ref.		Ref.		Ref.
Persistent fever and cough or difficulty breathing									
Yes	17 (1.84)	0.003 (0.002)	0.05 (–0.001 to 0.12)	< 0.001 (–0.001)	< 0.001 (–0.06 to 0.06)	< 0.001 (–0.001)	–0.01(–0.08 to 0.05)	< 0.001 (–0.001)	0.01 (–0.05 to 0.008)
No	909 (98.16)		Ref.		Ref.		Ref.		Ref.
Consultation with a doctor in the clinic in the previous 14 days									
Yes	84 (9.07)	0.009 (0.008)	0.10** (0.03 to 0.16)	< 0.001 (0.001)	0.02 (–0.05 to 0.08)	< 0.001 (–0.001)	–0.01 (–0.08 to 0.05)	< 0.001	–0.01 (–0.08 to 0.05)
No	842 (90.93)		Ref.		Ref.		Ref.		Ref.
Recent hospitalization in the previous 14 days									
Yes	4 (0.43)	0.001 (–0.001)	0.01 (–0.05 to 0.08)	0.001 (< 0.001)	0.03 (–0.04 to 0.09)	< 0.001 (–0.001)	0.01 (–0.06 to 0.07)	< 0.001 (–0.001)	0.01 (–0.05 to 0.07)
No	922 (99.97)		Ref.		Ref.		Ref.		Ref.
Recent testing for COVID-19 in the previous 14 days									
Yes	8 (0.86)	0.002 (0.001)	0.04 (–0.02 to 0.11)	0.001 (< 0.001)	0.03 (–0.03 to 0.10)	0.001 (< 0.001)	0.03 (–0.04 to 0.09)	< 0.001 (–0.001)	< 0.001 (–0.06 to 0.07)
No	918 (99.16)		Ref.		Ref.		Ref.		Ref.
Staying quarantined in the previous 14 days									
Yes	53 (5.72)	0.007 (0.006)	0.08* (0.02 to 0.15)	0.002 (0.001)	0.05 (–0.02 to 0.11)	0.001 (< 0.001)	0.03 (–0.03 to 0.09)	0.001 (< 0.001)	0.03 (–0.03 to 0.10)
No	873 (94.28)		Ref.		Ref.		Ref.		Ref.
Current self–rating health status									
Poor/Very poor	48 (5.18)		0.12*** (0.05 to 0.19)		0.001 (–0.06 to 0.08)		0.04 (–0.04 to 0.11)		< 0.001 (–0.07 to 0.07)
Average	213 (23.00)	0.042 (0.041)	0.20*** (0.14 to 0.27)	0.001 (< 0.001)	0.03 (–0.10 to 0.03)	0.002 (0.001)	–0.05 (–0.12 to 0.01)	0.001 (< 0.001)	–0.03 (–0.09 to 0.03)
Good/Very good	665 (71.81)		Ref.		Ref.		Ref.		Ref.
Medical insurance coverage									
Yes	308 (33.26)	0.035 (0.034)	0.19*** (0.12 to 0.25)	< 0.001 (0.001)	0.02 (–0.05 to 0.08)	< 0.001 (0.001)	–0.02, (–0.08 to 0.04)	< 0.001 (–0.001)	–0.02 (–0.08 to 0.05)
No	618 (66.74)		Ref.		Ref.		Ref.		Ref.

* $p < 0.05$; ** $p < 0.01$; $p < 0.001$

AR^2, Adjusted R–Squared; CI, confidence interval; N, number; Ref., reference

[a] Posttraumatic stress symptoms were measured using the Impact of Event Scale-Revised (IES-R).

[b] Depression, Anxiety, and Stress were measured using the Depression Anxiety Stress Scale (DASS-21)

Table 3. Correlation between contact history in the previous 14 days and the posttraumatic stress symptoms related to the COVID-19 outbreak as well as adverse mental health status during the pandemic (N = 926)

		PTSS [a]		Stress [b]		Anxiety [b]		Depression [b]	
Variables	**N (%)**	**R^2 (AR^2)**	**β (95% CI)**	**R^2 (AR^2)**	**β (95% CI)**	**R^2 (AR^2)**	**β (95% CI)**	**R^2 (AR^2)**	**β (95% CI)**
Close contacting an individual with confirmed COVID-19 infection									
Yes	4 (0.43)	0.001 (< 0.001)	0.03 (–0.04 to 0.09)	0.002 (0.001)	–0.04 (–0.11 to 0.02)	< 0.001 (–0.001)	–0.01 (–0.08 to 0.05)	0.001 (< 0.001)	–0.04 (–0.10 to 0.03)
No	922 (99.57)		Ref.		Ref.		Ref.		Ref.
Indirectly contacting an individual with confirmed COVID-19 infection									
Yes	14 (1.51)	0.002 (0.001)	–0.04 (–0.11 to 0.02)	0.003 (0.002)	–0.05 (–0.12 to 0.01)	0.004 (0.003)	–0.06 (–0.13 to < 0.001)	0.002 (0.001)	–0.05 (–0.11 to 0.02)
No	912 (99.49)		Ref.		Ref.		Ref.		Ref.
Contacting an individual with suspected COVID-19 or infected materials									
Yes	43 (4.64	0.002 (0.001)	0.05 (–0.02 to 0.11)	0.002 (0.001)	–0.05 (–0.11 to 0.02)	0.002 (0.001)	–0.04 (–0.11 to 0.02)	0.004 (0.004)	–0.06* (–0.13 to –0.001)
No	883 (95.96)		Ref.		Ref.		Ref.		Ref.

* $p < 0.05$; ** $p < 0.01$; $p < 0.001$

AR^2, Adjusted R–Squared; CI, confidence interval; N, number; Ref., reference

[a] Posttraumatic stress symptoms were measured using the Impact of Event Scale-Revised (IES-R)

[b] Depression, Anxiety and Stress were measured using the Depression Anxiety Stress Scale (DASS-21)

Table 4. Correlation between knowledge and concerns about coronavirus disease and the posttraumatic stress symptoms related to the COVID-19 outbreak as well as adverse mental health status during the pandemic (N = 926)

		PTSS [a]		Stress [b]		Anxiety [b]		Depression [b]	
Variables	**N (%)**	**R^2 (AR^2)**	**β (95% CI)**	**R^2 (AR^2)**	**β (95% CI)**	**R^2 (AR^2)**	**β (95% CI)**	**R^2 (AR^2)**	**β (95% CI)**
Knowledge about COVID–19									
Way of transmission									
Droplets									
Agree	920 (99.35)		0.002 (–0.06 to 0.07)		0.01 (–0.06 to 0.07)		–0.01 (–0.08 to 0.05)		0.01 (–0.05 to 0.08)
Disagree	2 (0.22)	< 0.001 (–0.001)	–0.02 (–1.41 to 1.36)	< 0.001 (–0.001)	–0.26 (–1.60 to 1.08)	0.001 (< 0.001)	–0.61 (–1.71 to 0.48)	< 0.001 (–0.001)	–0.37 (–1.66 to 0.91)
Do not know	4 (0.43)		Ref.		Ref.		Ref.		Ref.
Contact with contaminated objects									
Agree	797 (86.97)		–0.01 (–0.08 to 0.05)		–0.04 (–0.10 to 0.03)		–0.02 (–0.09 to 0.05)		–0.02 (–0.09 to 0.05)
Disagree	63 (6.80)	0.005 (0.004)	–0.18* (–0.36 to –0.01)	0.002 (0.001)	–0.11 (–0.29 to 0.06)	0.005 (0.004)	–0.20* (–0.37 to –0.03)	0.001 (< 0.001)	–0.10 (–0.28 to 0.07)
Do not know	66 (7.13)		Ref.		Ref.		Ref.		Ref.
Airborne transmission									
Agree	507 (54.75)		< 0.001 (–0.08 to 0.08)		0.04 (–0.04 to –0.12)		0.04 (–0.04 to 0.12)		0.04(–0.04 to 0.12)
Disagree	265 (28.62)	0.007 (0.007)	–0.11* (–0.21 to –0.02)	0.002 (0.001)	0.06 (–0.04 to 0.16)	< 0.001 (–0.001)	0.04 (–0.06 to 0.13)	0.001 (0.001)	0.07 (–0.03 to 0.16)
Do not know	154 (16.63)		Ref.		Ref.		Ref.		Ref.
Have you heard that the number of infected COVID-19 individuals has increased?									
Heard	923 (99.68)	0.005 (0.004)	0.07* (0.01 to 0.14)	0.001 (–0.001)	–0.02 (–0.09 to 0.04)	0.002 (< 0.001)	–0.04 (–0.10 to 0.02)	0.001 (< 0.001)	0.02 (–0.09 to 0.04)
Have not heard	3 (0.32)		Ref.		Ref.		Ref.		Ref.
Have you heard that the number of COVID-19 deaths has increased?									
Heard	917 (99.03)	0.012 (0.012)	0.11*** (0.05 to 0.18)	< 0.001 (–0.001)	–0.02 (–0.08 to 0.05)	< 0.001 (–0.001)	–0.01 (–0.07 to 0.06)	0.001 (< 0.001)	–0.03 (–0.09 to 0.04)
Have not heard	9 (0.97)		Ref.		Ref.		Ref.		Ref.
Have you heard that the number of individuals that have recovered from COVID-19 infection has increased?									
Heard	649 (70.09)	0.003 (0.002)	–0.06 (–0.12 to	0.003 (0.002)	0.05 (–0.01 to 0.12)	0.003 (0.002)	0.05 (–0.01 to 0.12)	0.003 (0.002)	0.06 (–0.01 to 0.12)

			0.01)					
Have not heard	277 (29.91)		Ref.		Ref.		Ref.	
The main source of health information								
Internet	648 (69.98)		0.07 (–0.002 to 0.15)		0.01 (–0.06 to 0.09)		0.03 (–0.04 to 0.10)	–0.01 (–0.09 to 0.06)
Television	194 (20.95)		0.16** (0.03 to 0.29)		–0.03 (–0.15 to 0.10)		–0.03 (–0.16 to 0.10)	–0.07 (–0.20 to 0.05)
Radio	19 (2.05)	0.002 (0.001)	0.01 (–0.25 to 0.27)	< 0.001 (–0.001)	0.13 (–0.13 to 0.39)	< 0.001 (0.001)	0.15 (–0.11 to 0.41)	< 0.001 (–0.001)	0.05 (–0.21 to 0.31)
Family members	24 (2.59)		0.22 (–0.03 to 0.46)		0.13 (–0.12 to 0.38)		0.12 (–0.13 to 0.37)	–0.02 (–0.27 to 0.23)
Other sources	41 (4.43)		Ref.		Ref.		Ref.	Ref.
Satisfaction with the amount of health information available on COVID–19								
Very satisfied	179 (19.33)		–0.06 (–0.18 to 0.06)		0.10 (–0.02 to 0.22)		–0.002 (–0.13 to 0.14)	0.01 (–0.12 to 0.13)
Somewhat satisfied	304 (32.83)	0.003 (0.002)	0.03 (–0.07 to 0.13)	0.002 (0.001)	0.10 (–0.002 to 0.20)	0.003 (0.002)	0.03 (–0.07 to 0.13)	0.003 (0.002)	0.05 (–0.06 to 0.15)
Not very satisfied	293 (30.56		0.08 (–0.02 to 0.19)		0.09 (–0.01 to 0.19)		0.03 (–0.07 to 0.14)	0.03 (–0.07 to 0.14)
Not satisfied at all	83 (8.96)		0.15 (–0.01 to 0.31)		0.02 (–0.14 to 0.17)		–0.12 (–0.27 to 0.04)	–0.10 (–0.25 to 0.06)
Do not know	77 (8.32)		Ref.		Ref.		Ref.	Ref.
Concerns about COVID–19								
Level of confidence in the family doctor's ability to diagnose or recognize COVID–19								
Very confident	190 (20.52)		0.08 (–0.03 to 0.19)		0.01 (0.06 to –0.11)		–0.03 (–0.14 to 0.08)	–0.004 (–0.12 to 0.11)
Somewhat confident	304 (32.83)		0.13** (0.04 to 0.23)		0.04 (–0.05 to 0.14)		0.03 (–0.06 to 0.13)	0.04 (–0.06 to 0.13)
Not very confident	223 (24.08)	0.03 (0.03)	0.24*** (0.14 to 0.35)	0.001 (< 0.001)	0.04 (–0.06 to 0.15)	< 0.001 (–0.001)	–0.01 (–0.12 to 0.09)	0.001 (–0.003)	0.03 (–0.08 to 0.14)
Not at all confident	92 (9.94)		0.22*** (0.08 to 0.35)		0.01 (–0.12 to 0.15)		–0.04 (–0.18 to 0.10)	0.04 (–0.10 to 0.17)
Do not know	117 (12.63)		Ref.		Ref.		Ref.	Ref.
Likelihood of contracting COVID−19 during the current outbreak								
Very likely	628 (67.82)		0.10** (0.02 to –0.17)		0.01 (–0.06 to 0.09)		–0.004 (–0.08 to 0.07)	0.02 (–0.06 to 0.09)
Somewhat likely	190 (20.52)		–0.004 (–0.14 to 0.13)		0.02 (–0.11 to 0.16)		0.01 (–0.13 to 0.14)	0.03 (–0.10 to 0.17)

Not very likely	56 (6.05)	0.05 (0.05)	–0.24* (–0.44 do–0.03)	< 0.001 (–0.001)	–0.12 (–0.33 to 0.10)	< 0.001 (–0.001)	–0.19 (–0.41 to 0.02)	0.001 (< 0.001)	–0.19 (–0.40 to 0.02)
Not likely at all	22 (2.38)		–0.13 (–0.40 to 0.16)		0.16 (–0.12 to 0.44)		0.12 (–0.16 to 0.40)		0.12 (–0.16 to 0.40)
Do not know	30 (3.24)		Ref.		Ref.		Ref.		Ref.
Likelihood of survival if infected with COVID–19									
Very likely	496 (53.56)		–0.13** (–0.22 to –0.05)		0.004 (–0.08 to 0.09)		–0.01 (–0.09 to 0.07)		–0.001 (–0.09 to 0.07)
Somewhat likely	280 (30.24)		–0.03 (–0.13 to 0.08)		0.03 (–0.07 to 0.14)		0.01 (–0.10 to –0.12)		0.002 (–0.10 to 0.11)
Not very likely	63 (6.80)	0.032 (0.031)	0.21** (0.05 to 0.38)	< 0.001 (–0.001)	0.02 (–0.15 to 0.19)	0.001 (< 0.001)	0.07 (–0.09 to 0.25)	< 0.001 (–0.001)	–0.01 (–0.18 to 0.17)
Not likely at all	15 (1.62)		0.15 (–0.06 to 0.36)		–0.002 (–0.22 to 0.21)		–0.08 (–0.29 to 0.14)		–0.04 (–0.26 to 0.17)
Do not know	72 (7.78)		Ref.		Ref.		Ref.		Ref.
Concerns about other family members getting COVID−19 infection									
Very worried	527 (56.91)		0.10* (0.01 to 0.18)		0.07 (–0.02 to 0.15)		0.07 (–0.01 to 0.16)		0.07 (–0.02 to 0.15)
Somewhat worried	261 (28.83)		0.03 (–0.09 to 0.15)		0.08 (–0.04 to 0.20)		0.10 (–0.02 to 0.22)		0.08 (–0.04 to 0.20)
Not very worried	70 (7.56)	0.174 (0.174)	–0.12 (–0.34 to 0.11)	< 0.001 (0.001)	0.16 (–0.07 to 0.39)	< 0.001 (–0.001)	0.17 (–0.05 to 0.40)	< 0.001 (–0.001)	0.14 (–0.08 to 0.37)
Not worried at all	55 (5.94)		–0.20 (–0.44 to 0.06)		0.23 (–0.02 to 0.48)		0.22 (–0.03 to 0.47)		0.22 (–0.03 to 0.47)
Do not have family members	7 (0.76)		Ref.		Ref.		Ref.		Ref.
Concerns about a child under 16 getting COVID-19 infection									
Very worried	346 (37.67)		022*** (0.15 to 0.30)		–0.001 (–0.08 to 0.08)		–0.001 (–0.08 to 0.07)		–0.01 (–0.09 to 0.07)
Somewhat worried	163 (17.60)		–0.05 (–0.15 to 0.04)		–0.03 (–0.13 d0 0.06)		0.01 (–0.08 to 0.10)		–0.02 (–0.11 to 0.07)
Not very worried	86 (9.29)	0.025 (0.024)	–0.14** (–0.24 to –0.04)	< 0.001 (–0.001)	–0.02 (–0.12 to 0.08)	< 0.001 (–0.001)	–0.04 (–0.14 to 0.06)	< 0.001 (–0.001)	–0.02 (–0.12 to 0.08)
Not worried at all	32 (3.46)		–0.24*** (–0.35 to –0.14)		0.003 (–0.11 to 0.11)		–0.02 (–0.12 to 0.09)		0.01 (–0.10 to 0.12)
Do not have children	299 (32.29)		Ref.		Ref.		Ref.		Ref.

* $p < 0,05$; ** $p < 0,01$; $p < 0,001$

AR^2, Adjusted R–Squared CI, confidence interval; N, number; Ref., reference

[a] Posttraumatic stress symptoms were measured using the Impact of Event Scale-Revised (IES-R)

[b] Depression, Anxiety and Stress were measured using the Depression Anxiety Stress Scale (DASS-21)

Table 5. Correlation between precautionary measures in the previous 14 days, additional health information required and the posttraumatic stress symptoms related to the COVID-19 outbreak as well as adverse mental health status during the pandemic (N = 926)

		PTSS [a]		Stress [b]		Anxiety [b]		Depression [b]	
Variables	**N (%)**	**R^2 (AR^2)**	**β (95% CI)**	**R^2 (AR^2)**	**β (95% CI)**	**R^2 (AR^2)**	**β (95% CI)**	**R^2 (AR^2)**	**β (95% CI)**
Covering mouth when coughing and sneezing									
Always	773 (83.48)		0.06 (–0.01 to 0.13)		0.01 (–0.06 to 0.08)		0.02 (–0.04 to 0.09)		–0.02 (–0.09 to 0.05)
Most of the time	118 (12.74)		0.11 (–0.06 to 0.29)		–0.01 (–0.18 to 0.17)		0.02 (–0.15 to 0.20)		–0.11 (–0.29 to 0.06)
Sometimes	17 (1.84)	0.001 (< 0.001)	0.14 (–0.26 to 0.54)	0.002 (0.001)	–0.10 (–0.51 to 0.30)	< 0.001 (–0.001)	–0.06 (–0.46 to 0.34)	0.004 (0.003)	–0.26 (–0.64 to 0.12)
Occasionally	7 (0.76)		0.27 (–0.23 to 0.78)		0.05 (–0.48 to 0.58)		0.35 (–0.14 to 0.85)		–0.07 (–0.60 to 0.46)
Never	11 (1.19)		Ref.		Ref.		Ref.		Ref.
Avoidance of sharing utensils									
Always	591 (63.82)		0.11* (0.03 to 0.18)		0.01 (–0.07 to 0.08)		0.01 (–0.07 to 0.08)		0.01 (–0.06 to 0.09)
Most of the time	189 (20.41)		0.20** (0.08 to 0.32)		0.07 (–0.06 to 0.19)		0.05 (–0.07 to 0.18)		0.07 (–0.06 to 0.20)
Sometimes	45 (4.86)	0.02 (0.001)	0.11 (–0.08 to 0.31)	0.001 (–0.001)	0.04 (–0.16 to 0.23)	< 0.001 (–0.001)	0.01 (–0.19 to 0.20)	0.001 (< 0.001)	0.06 (–0.13 to 0.26)
Occasionally	41 (4.43)		0.23* (0.03 to 0.42)		0.03 (–0.17 to 0.23)		0.03 (–0.17 to 0.23)		0.01 (–0.19 to 0.21)
Never	60 (6.48)		Ref.		Ref.		Ref.		Ref.
Washing hands with soap and water									
Always	880 (95.03)		0.06 (–0.01 to 0.12)		0.03 (–0.03 to 0.10)		0.01 (–0.05 to 0.08)		0.01 (–0.05 to 0.08)
Most of the time	38 (4.10)		0.25 (–0.07 to 0.57)		0.18 (–0.15 to 0.50)		0.10 (–0.23 to 0.42)		0.09 (–0.24 to 0.42)
Sometimes	6 (0.65)	0.007 (0.006)	0.02 (–0.98 to 1.02)	< 0.001 (–0.001)	0.32 (–0.62 to 1.27)	< 0.001 (–0.001)	–0.03 (–1.02 to 0.97)	< 0.001 (–0.001)	0.17 (–0.81 to 1.16)
Occasionally or Never	2 (0.22)		Ref.		Ref.		Ref.		Ref.
Washing hands immediately after coughing, rubbing nose, or sneezing									
Always	439 (47.41)		0.16*** (0.07 to 0.25)		0.02 (–0.07 to 0.11)		0.04 (–0.05 to 0.13)		0.004 (–0.09 to 0.09)
Most of the time	286 (30.89)		0.16** (0.05 to 0.27)		0.04 (–0.07 to 0.15)		0.07 (–0.04 to		0.03 (–0.08 to

							0.18)		0.14)
Sometimes	112 (12.10)	0.007 (0.006)	0.16 (–0.01 to 0.32)	< 0.001 (– 0.001)	0.01 (–0.15 to 0.18)	< 0.001 (– 0.001)	0.04 (– 0.13 to 0.20)	< 0.001 (– 0.001)	–0.05 (– 0.21 to 0.11)
Occasionally	51 (5.51)		0.07 (–0.15 to 0.28)		0.05 (–0.16 to 0.26)		0.09 (– 0.12 to 0.30)		0.01 (– 0.21 to 0.22)
Never	38 (4.10)		Ref.		Ref.		Ref.		Ref.
Wearing a medical mask regardless of the symptoms' presence or absence									
Always	141 (15.23)		0.19*** (0.10 to 0.28)		–0.10* (– 0.19 to 0.01)		–0.13** (– 0.22 to – 0.04)		–0.09 (– 0.18 to 0.004)
Most of the time	302 (33.61)		0.19*** (0.11 to 0.26)		–0.04 (– 0.12 to 0.04)		–0.04 (– 0.12 to 0.04)		–0.03 (– 0.10 to 0.05)
Sometimes	89 (9.61)	0.016 (0.015)	0.06 (–0.03 to 0.16)	0.002 (0.001)	–0.04 (– 0.14 to 0.06)	0.004 (0.003)	–0.05 (– 0.15 to 0.05)	0.001 (< 0.001)	–0.01 (– 0.11 to 0.09)
Occasionally	61 (6.59)		0.18*** (0.09 to 0.28)		–0.07 (– 0.16 to 0.03)		–0.11* (– 0.21 to – 0.02)		–0.08 (– 0.18 to 0.02)
Never	333 (35.96)		Ref.		Ref.		Ref.		Ref.
Washing hands after touching contaminated objects									
Always	689 (74.41)		0.05 (–0.02 to 0.13)		–0.06 (– 0.13 to 0.02)		0.01 (– 0.06 to 0.09)		–0.08* (– 0.15 to – 0.002)
Most of the time	161 (17.39)		0.05 (–0.10 to 0.20)		–0.13 (– 0.28 to 0.02)		0.002 (– 0.15 to 0.15)		–0.17* (– 0.32 to – 0.02)
Sometimes	49 (5.29)	0.014 (0.014)	–0.02 (–0.28 to 0.24)	0.002 (0.001)	–0.20 (– 0.45 to 0.06)	0.002 (0.001)	0.02 (– 0.24 to 0.28)	0.003 (0.002)	–0.27* (– 0.52 to – 0.02)
Occasionally	15 (1.62)		–0.04 (–0.45 to 0.37)		–0.42*(– 0.79 to – 0.04)		–0.17 (– 0.57 to 0.24)		–0.45** (– 0.81 to – 0.08)
Never	12 (1.30)		Ref.		Ref.		Ref.		Ref.
Feeling that too much unnecessary fuss has been made concerning the COVID-19 outbreak									
Always	112 (12.10)		–0.10 (–0.22 to 0.02)		0.07 (–0.05 to 0.18)		–0.04 (– 0.16 to 0.07)		0.08 (– 0.04 to 0.19)
Most of the time	191 (20.63)		–0.11* (–0.21 to –0.01)		0.02 (–0.08 to 0.12)		–0.02 (– 0.12 to 0.09)		0.01 (– 0.09 to 0.12)
Sometimes	320 (34.56)	0.004 (0.003)	–0.09* (–0.18 to –0.003)	0.001 (< 0.001)	–0.01 (– 0.10 to 0.08)	0.001 (– 0.001)	–0.04 (– 0.13 to 0.05)	< 0.001 (– 0.001)	–0.003 (– 0.09 to 0.09)

Occasionally	129 (13.93)		–0.13* (–0.24 to –0.02)		–0.02 (–0.14 to 0.09)		–0.03 (–0.14 to 0.08)		–0.01 (–0.12 to 0.11)
Never	174 (18.79)		Ref.		Ref.		Ref.		Ref.
Average number of hours staying at home per day to avoid COVID−19									
0–9	88 (9.50)		–0.13*** (–0.21 to –0.06)		–0.03 (–0.10 to 0.05)		–0.05 (–0.12 to 0.03)		–0.02 (–0.09 to 0.06)
10–19	225 (24.30)	< 0.001 (0.001)	0.02 (–0.04 to 0.09)	< 0.001 (–0.001)	–0.02 (–0.09 to 0.05)	0.006 (0.005)	–0.08* (–0.15 to –0.01)	0.003 (0.002)	–0.06 (–0.13 to 0.01)
20–24	613 (66.20)		Ref.		Ref.		Ref.		Ref.
Need for further health information about the COVID-19 infection									
Yes	621 (67.06)	0.063 (0.062)	0.25** (0.19 to 0.31)	0.001 (< 0.001)	–0.04 (–0.10 to 0.03)	< 0.001 (–0.001)	–0.01 (–0.08 to 0.05)	0.003 (0.02)	–0.06 (–0.12 to 0.01)
No	305 (32.94)		Ref.		Ref.		Ref.		Ref.
Need for details on symptoms of the COVID−19 infection									
Yes	541 (58.41)	0.054 (0.053)	0.23*** (0.17 to 0.30)	0.004 (0.003)	–0.06 (–0.13 to 0.005)	0.004 (0.003)	–0.06 (–0.13 to 0.003)	0.005 (0.004)	–0.07* (–0.14 to –0.01)
No	385 (41.58)		Ref.		Ref.		Ref.		Ref.
Need for advice on prevention of the COVID−19 infection									
Yes	372 (40.17)	0.058 (0.058)	0.24*** (0.18 to 0.30)	< 0.001 (–0.001)	–0.01 (–0.07 to 0.06)	< 0.001 (–0.001)	–0.02 (–0.08 to 0.04)	0.001 (< 0.001)	–0.02 (–0.09 to 0.04)
No	554 (59.83)		Ref.		Ref.		Ref.		Ref.
Need for advice on treatment of the COVID−19 infection									
Yes	557 (60.15)	0.109 (0.108)	0.33*** (0.26 to 0.39)	< 0.001 (–0.001)	0.01 (–0.05 to 0.07)	< 0.001 (0.001)	0.02 (–0.05 to 0.08)	< 0.001 (–0.001)	0.01 (–0.05 to 0.08)
No	369 (39.85)		Ref.		Ref.		Ref.		Ref.
Need for regular updates on the latest information about the COVID−19 infection									
Yes	734 (79.27)	0.045 (0.045)	0.21*** (0.15 to 0.28)	< 0.001 (0.001)	0.01 (–0.05 to 0.08)	< 0.001 (–0.001)	0.01 (–0.06 to 0.07)	0.001 (< 0.001)	–0.03 (–0.09 to 0.04)
No	192 (20.73)		Ref.		Ref.		Ref.		Ref.
Need for the latest updates on outbreaks of the COVID−19 infection in the local area									
Yes	786 (84.88)	0.052 (0.051)	0.23*** (0.16 to 0.29)	0.001 (< 0.001)	–0.03 (–0.10 to 0.03)	0.001 (< 0.001)	–0.03 (–0.09 to 0.04)	0.002 (0.001)	–0.05 (–0.11 to 0.01)

No	140 (15.12)		Ref.		Ref.		Ref.		Ref.
Need for advice among people who may need more personalized information, such as those with pre–existing medical conditions									
Yes	575 (62.10)	0.063 (0.062)	0.25*** (0.19 to 0.31)	< 0.001 (0.001)	0.01 (–0.06 to 0.07)	< 0.001 (–0.001)	–0.003 (–0.07 to 0.06)	< 0.001 (–0.001)	–0.02 (–0.08 to 0.05)
No	351 (37.90)		Ref.		Ref.		Ref.		Ref.
Need for information on the availability and effectiveness of medicines/vaccines for the COVID−19 infection									
Yes	755 (81.53)	0.052 (0.051)	0.23*** (0.17 to 0.29)	< 0.001 (–0.001)	–0.01 (–0.07 to 0.06)	0.001 (<0.001)	0.03 (–0.03 to 0.09)	< 0.001 (–0.001)	–0.01 (–0.08 to 0.05)
No	171 (18.47)		Ref.		Ref.		Ref.		Ref.
Need for the latest updates on the number of people infected with COVID-19 and their location									
Yes	735 (79.37)	0.041 (0.040)	0.20*** (0.14 to 0.27)	< 0.001 (–0.001)	0.014 (–0.05 to 0.08)	0.001 (<0.001)	0.03 (–0.04 to 0.09)	< 0.001 (–0.001)	0.001 (–0.06 to 0.07)
No	191 (20.63)		Ref.		Ref.		Ref.		Ref.
Need for travel advice during the COVID-19 epidemic									
Yes	333 (35.96)	0.035 (0.034)	0.19*** (0.12 to 0.25)	< 0.001 (–0.001)	0.004 (–0.06 to 0.07)	< 0.001 (–0.001)	–0.02 (–0.08 to 0.05)	< 0.001 (–0.001)	–0.01 (–0.07 to 0.06)
No	593 (64.04)		Ref.		Ref.		Ref.		Ref.
Need for updates on the ways of COVID-19 transmission									
Yes	570 (61.56)	0.036 (0.035)	0.19*** (0.13 to 0.25)	0.001 (–0.001)	–0.02 (–0.09 to 0.04)	0.001 (<0.001)	–0.02 (–0.09 to 0.04)	0.001 (<0.001)	–0.03 (–0.10 to 0.03)
No	356 (38.44)		Ref.		Ref.		Ref.		Ref.
Need for updates on how other countries handle the COVID-19 outbreak									
Yes	703 (75.92)	0.040 (0.039)	0.20*** (0.14 to 0.26)	0.001 (–0.001)	0.02 (–0.04 to 0.09)	0.001 (<0.001)	0.04 (–0.03 to 0.10)	< 0.001 (–0.001)	0.02 (–0.05 to 0.08)
No	223 (24.08)		Ref.		Ref.		Ref.		Ref.

* $p < 0.05$; ** $p < 0.01$; $p < 0.001$

AR^2, Adjusted R–Squared; CI, confidence interval; N, number; Ref., reference

[a] Posttraumatic stress symptoms were measured using the Impact of Event Scale-Revised (IES-R)

[b] Depression, Anxiety and Stress were measured using the Depression Anxiety Stress Scale (DASS-21)