Research article

The effect of COVID-19 pandemic on mental health and quality of life in the Athens area – Greece

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ABSTRACT

This study examines the associations of the COVID -19 pandemic stressors with the mental health and quality of life (QoL) of the general population in different demographic areas of Athens. The random sample of the study consisted of 602 participants, 389 (64,6%) women and 213 (35,4%) men residing in Attica (Greece). It was conducted with telephone interviews during the first wave of the pandemic. The instruments used were: the World Health Organization Quality of Life Instrument (WHOQOL-BREF), Depression Anxiety Stress Scale (DASS-21), Body Vigilance Scale (BVS), Dimensional Obsessive-Compulsive Scale (Category 1: contamination obsessions -decontamination compulsions) (DOCS) and a set of socio-demographic data and questions on stressors related to the COVID-19 outbreak. A range of statistical analyses was used, including descriptive statistics, examination of the questionnaires' internal consistency, calculating Cronbach's alpha coefficient, as well as multiple linear regression analyses with dependent variables the WHOQOL-BREF, DASS-21, DOCS, and BVS scales. According to the results of our study: (a) The greater the extent of negative emotions due to the pandemic and the imposed restrictive measures, such as worry and fear, the higher the score of depression, anxiety, stress, obsessive-compulsive symptomatology, body vigilance and the lower the scores of the WHOQOL domains (Physical Health, Psychological Health, Social Relationships, Environment), (b) the fear of being contaminated by the virus seems to have intensified depression-anxiety-stress (DASS-21), obsessive-compulsive (DOCS) and hypochondriacal (BVS) symptomatology. (c) The independent variables of depression, stress and anxiety, and obsessive-compulsive and hypochondriacal symptomatology were negatively associated with QoL d) The most vulnerable groups in terms of QoL and the mental health indicators in our study were those with psychiatric or/and physical illness, the elderly, the unemployed during the lockdown period, those with low educational/socioeconomic status and those living alone. In conclusion, the negative emotions associated with the COVID-19 outbreak and the imposed restrictive measures had a serious impact on the mental health and QoL of the population. This and other similar findings should be taken into account by authorities and decision-makers to prevent and deal with the effects of the pandemic. Unfortunately, the COVID-19 pandemic is still continuing and the imposition of new restrictive measures is being considered. This increases the relevance of research like the one presented here.

KEYWORDS: Covid-19 stressors, quality of life, depression, stress, contamination obsessions -decontamination compulsions, body vigilance.

Introduction

The sudden coronavirus pandemic has spread at an alarming rate worldwide provoking millions of deaths. Especially in Greece, a total of 4336 cases had been confirmed as of July 30th 2020 and the number of deaths was 203 whereas on November 29th, 2020 the number of confirmed cases was 104.227 and the number of accumulated deaths was 2.321. Up to now (July 2022), over 30.000 people passed away due to COVID-19.

Beyond the physical impacts, the COVID-19 pandemic had various serious mental health effects. Indeed, relevant studies and meta-analyses have shown high levels

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of psychological distress in the general population, with higher levels of anxiety and depression in people with underlying diseases, and in those actually infected by the virus,[1] as well as post-traumatic stress symptoms.[2] The rapid spread of the disease, its high mortality rate, and concerns about the future are probably the main sources of anxiety.[3] In addition, according to the findings of several studies, the fear and distress linked to the virus spread have contributed to high levels of depression, anxiety,[4–6] obsessive-compulsive disorder (OCD) symptomatology as well as health anxiety.[7] Moreover, the concern about COVID-19 was positively correlated with both obsessive-compulsive symptomatology (OCS) and health anxiety symptoms.[8]

Pandemics overall have a significant impact on individuals' quality of life (QoL) in different dimensions such as psychological and physical health, social and family relationships, issues related to work-unemployment, etc.[9–11] Indeed, research referring to the impact of coronavirus disease and related restrictions on mental health and QoL of the general population in Austria, showed an increase of depression and decrease of QoL in times of COVID-19 as compared to the pre- COVID-19 period.[12]

Also, as mentioned in a recent review,[13] of those who have been quarantined, have reported a significantly high prevalence of psychological distress, emotional disturbance, depression, stress, low mood, irritability, insomnia, post-traumatic stress, anger, and emotional exhaustion. It seems that the lockdown, the loss of normal routine, and reduced social and physical contact with others are stressors that probably contribute to boredom, irritability, and isolation from the rest of the world.

The present study was conducted by the Society of Preventive Psychiatry. We investigated the impact of the COVID-19 outbreak and of the related imposed restrictive measures on mental health and QoL of the general population in Attica, Greece. The objectives of the study were:

– To assess QoL, stress-anxiety-depression, contamination obsessions/ decontamination compulsions, and the degree of body vigilance.

– To investigate the associations of QoL with stress-anxiety-depression, contamination obsessions/ decontamination compulsions, and the degree of body vigilance.

– To detect the effect of sociodemographic characteristics and of stressors related to the COVID-19 outbreak on QoL and on the rest of the variables of the study.

Material and Method

Participants and procedures

The sample consisted of 602 persons, 389 (64.6%) women and 213 (35.4%) men with mean age 47.8 (SD= 17.0) years. Table 1 provides descriptive summaries of the demographic characteristics of the sample. Our research was carried out during the first period of restrictions imposed in Greece to minimize the spread of the pandemic. It was carried out using telephone interviews, with the application of systematic sampling. Specifically, a random sample was taken from several districts in Athens, by selecting 5 citizens' telephone numbers every 10 pages of the Attica region telephone directory, maintaining the anonymity of personal data. The interviews were conducted during a three-month time span (from April to June 2020). The number of 602 participants refers to the individuals who answered our phone calls and accepted to participate in our research during the above time span.

Measures

The instruments used were:

World Health Organization QOL Instrument (WHOQOL-BREF):[14] The Greek version of WHOQOL–BREF includes 30 questions assessing an overall quality of life/general health facet, and 4 domains: physical health, psychological health, social relationships, and environment. This instrument has been adapted to the Greek population[15] with satisfactory internal consistency (Cronbach's alpha coefficient: 0,67–0,81) and satisfactory construct, convergent, and discriminant validity. In our study, the calculation of Cronbach's alpha coefficient per domain was performed, which resulted in satisfactory alpha values ranging from 0.70–0.76.

Depression Anxiety Stress Scale (DASS-21):[16] It includes 21 questions. The depression, scale measures: dysphoria, hopelessness, devaluation of life, self-deprecation, lack of interest/involvement, anhedonia, and inertia. The anxiety scale estimates autonomic arousal, skeletal musculature effects, situational anxiety, and subjective experience of anxious affect. The stress scale measures: difficulty relaxing, persistent arousal, agitation, irritability/over reactiveness, and impatience. The DASS was shown to possess satisfactory psychometric properties, and the factor structure was substantiated both by exploratory and confirmatory factor analysis.[16] This instrument has been adapted to the Greek population[17] with satisfactory internal consistency for the total scale (Cronbach's alpha coefficient: 0,93) and satisfactory psychometric properties concerning validity. In our study, the calculation of Cronbach's alpha coefficient per each subscale

Table1. Socio-demographic characteristics.

Variables		N	%
Gender	Women	389	64.6
	Men	213	35.4
Age, mean (SD)		47.8 (17.0)	
Number of children	0	316	52.5
	1	108	17.9
	≥2	178	29.5
Number of habitants at home, mean (SD) median (IQR)		1.8 (1.2)	2 (1–3)
Years of Education, mean (SD)		15 (3.9)	
Family status	Married	242	40.2
	Living together	50	8.3
	Unmarried	225	37.4
	Widowed	35	5.8
	Divorced	43	7.1
	Separated	7	1.2
Living circumstances	With own family	281	46.7
	With parental family	110	18.3
	Alone	147	24.4
	With partner (unmarried)	64	10.6
Professsional status	Full-time employed	315	52.3
	Part-time employed	33	5.5
	Student (graduate/postgraduate)	23	3.8
	Retired	119	19.8
	Household	30	5.0
	Unemployed	41	6.8
	Other	41	6.8
Individuals under suspension of work	No	254	73.0
	Yes	94	27.0
Job condition	At work	150	55.4
	Remotely	121	44.6
Socioeconomic status	Upper class	32	5,3
	Upper middle class	123	20.4
	Middle class	333	55,3
	Middle-lower class	92	15,3
	Lower class	22	3,7

was performed, which resulted in satisfactory alpha values ranging from 0.83–0.93.

Body Vigilance Scal–BVS:[18] a four-item questionnaire measuring conscious attention focused on internal bodily sensations. There are three items that assess the degree of Attentional focus on bodily sensations, the Perceived sensitivity to changes in bodily sensations, and the Average amount of time spent attending to bodily sensations. The fourth item involves separate ratings for Attention to 15 sensations (e.g., heart palpitations). An overall score is also calculated.

The Body Vigilance Scale has been validated in clinical and nonclinical samples with satisfactory psychometric properties (reliability-validity).[18] BVS scale underwent

a rigorous translation in Greek, back translation, and cross-examination by bilingual subjects. In our study, the calculation of Cronbach's alpha coefficient the for BVS total score was performed, which resulted in a satisfactory alpha value (0.75).

Dimensional Obsessive-Compulsive Scale (DOCS):[19] assessing contamination obsessions and decontamination compulsions (Category 1: Concerns about Germs and Contamination), which includes 5 questions and an overall score, acquiring satisfactory psychometric properties (reliability and validity).[19] DOCS (Category 1) underwent a rigorous translation in Greek, back translation, and cross-examination by bilingual subjects. In our study, the calculation of Cronbach's alpha coefficient for DOCS and especially for the subscale "Concerns about Germs and Contamination" was performed, which resulted in a satisfactory alpha value (0.80).

Set of socio-demographic data and questions-stressors related to the COVID-19 outbreak, which refer to sex, age, residence, educational status, years of education, professional status, income, family status, number of children, living circumstances, socioeconomic status, job status during quarantine, job condition, category of respondents regarding COVID-19 infection.

The questions-stressors related to the COVID-19 outbreak evaluate the following: frequency and reasons of movements outside the home, accuracy, and frequency of getting mass media information about the virus, negative feelings due to the pandemic and restrictive measures, fear of contamination, negative feelings due to social isolation, insecurity due to job and economic matters.

Statistical analysis

Statistical analyses were conducted using SPSS statistical software (version 22.0). A range of statistical analyses was used, including descriptive statistics and examination of the questionnaires' internal consistency, calculating Cronbach's alpha coefficient. Also, multiple linear regression analyses in a stepwise method (p for entry 0.05, p for removal 0.10) were used with dependent variables the WHOQOL-BREF, DASS-21, DOCS, and BVS scales. The regression equation included also terms for demographic characteristics and stressors regarding the pandemic. The adjusted regression coefficients (β) with standard errors (SE) were computed from the results of the linear regression analyses. When DOCS or BVS scales were the dependent variables, multiple linear regression was conducted after having logarithmically transformed the dependent variable. All reported p values are two-tailed. Statistical significance was set at $p < 0.05$.

Results

Sample characteristics

Regarding the stressful conditions that have been developed due to COVID-19 and the related restrictive measures: the majority of the participants (n=497, 82.6%) reported that they were satisfied with the accuracy of mass media information about COVID-19 and many of them (n=238, 39.5%) were getting information 2–3 times per day. Many participants used to get out of the house during the quarantine period several times per week (n=202, 33.6%), getting out mostly for shopping (n=480, 79.9%).

The most prevalent negative feelings reported by the majority of the participants were worry (n=491, 81.6%), stress (n=386, 64.1%), and fear (n=288, 47.8%). A significant percentage of the participants (n=171, 28.7%) reported high levels of negative feelings due to social isolation and moderate levels of negative feelings (n=207, 34.4%) due to the pandemic and the restrictive measures in general. Also, a significant proportion of the population (n= 222, 36.9%) exhibited moderate levels of fear of being contaminated and high levels of fear of loved ones getting the virus (n=232, 38,5%). Finally, a significant number of participants (n=260, 43,2%) reported high/very high levels of insecurity due to financial matters and a restricted proportion of the sample showed high/very high levels of job insecurity (n=191, 31,8%).

Associations of WHOQOL- BREF

According to multiple linear regression analysis, men, older people, those with lower socioeconomic status, unemployed participants during the quarantine, and those with mental or/and physical illness showed lower scores in the majority of WHOQOL-BREF domains. Also, married people exhibited higher QoL scores.

Concerning the stressors related to the COVID-19 outbreak: the greater the extent of negative emotions due to the pandemic and the restrictive measures, the lower the scores of all QoL domains. Higher scores of the fear of significant others contracting the virus and of occupational insecurity were associated with lower scores in certain QoL domains.

Depression and stress scores were significantly negatively associated with WHOQOL-BREF domain scores. A higher score of the average amount of time spent attending to bodily sensations was associated with lower scores in WHOQOL-BREF domains (table 2)

Associations of DASS-21

According to multiple linear regression analysis, participants with the lower score of educational and soci-

Table 2. Multiple linear regression analysis with WHOQOL– BREF domains as dependent variables.

		β+	SE++	b‡	P
Dependent: WHOQOL–BREF Overall QoL/ and general health					
Gender	Women (reference)				
	Men	–2.73	1.17	–0.08	0.020
Age		–0.14	0.05	–0.13	0.006
Socioeconomic status		–2.04	0.79	–0.10	0.010
Group	Healthy (reference)				
	Patients with psychiatric illness	–8.70	2.22	–0.14	<0.001
	Patients with physical illness	–8.23	1.49	–0.19	<0.001
	Patients with psychiatric and physical illness	–8.43	2.64	–0.11	0.002
Negative feelings due to pandemic/restrictive measures		–2.73	0.61	–0.17	<0.001
Depression		–1.10	0.23	–0.25	<0.001
Average amount of time spent attending to bodily sensations		–1.01	0.31	–0.15	0.001
Dependent: WHOQOL–BREF Physical health					
Socioeconomic status		–1.66	0.61	–0.09	0.006
Group	Healthy (reference)	–5.58	1.71	–0.10	0.001
	Patients with psychiatric illness	–6.59	1.15	–0.18	<0.001
	Patients with physical illness	–10.89	2.04	–0.17	<0.001
	Patients with psychiatric and physical illness				
Fear of beloved ones being contaminated		–1.38	0.56	0.09	0.014
Negative feelings due to pandemic/restrictive measures		–1.37	0.47	–0.10	0.004
Depression		–1.51	0.18	–0.39	<0.001
Stress		–0.37	0.16	–0.11	0.025
Average amount of time spent attending to bodily sensations		–1.03	0.24	–0.17	<0.001
Dependent: WHOQOL–BREF Psychological health					
Married/ Living together	No (reference)				
	Yes	2.90	1.13	0.10	0.011
Socio–economic status		–1.26	0.63	–0.07	0.045
Negative feelings due to pandemic/restrictive measures		–1.26	0.49	–0.09	0.010
Depression		–1.79	0.18	–0.48	<0.001
Stress		–0.36	0.17	–0.11	0.037
Dependent: WHOQOL–BREF Social relationships					
Age		–0.10	0.05	–0.11	0.046
Married/ Living together	No (reference)				
	Yes	5.38	1.42	0.17	<0.001
Negative feelings due to pandemic/restrictive measures		–1.49	0.61	–0.10	0.015
Depression		–1.41	0.23	–0.35	<0.001
Dependent: WHOQOL–BREF Environment					
Socioeconomic status		–2.74	0.61	–0.20	<0.001
Working during quarantine	No (reference)				
	Yes	–2.93	1.21	–0.12	0.016
Negative feelings due to pandemic/restrictive measures		–1.86	0.47	–0.17	<0.001
Insecurity due to job matters		–1.19	0.43	–0.13	0.006
Depression		–0.70	0.18	–0.23	<0.001

+regression coefficient ++Standard Error ‡Standard Regression Coefficient
Note: only significant variables are presented

oeconomic status and those with mental or/and physical illness exhibited higher scores in DASS-21 domains. Also, people who shared accommodation showed a lower score in significant DASS-21 dimensions.

The greater the extent of negative emotions due to the pandemic and the restrictive measures and the greater the fear of being infected by the virus, the higher the scores of DASS-21 dimensions. Participants who reported that they had accurate information about COVID-19 from the media showed lower scores in DASS-21 dimensions (table 3).

Associations of DOCS

According to multiple linear regression analysis, people with lower educational levels, those with higher monthly income, and patients with mental or/and physical illness, in comparison to healthy individuals, exhibited high scores soon on the DOCS scale. The more frequent updates provided to the participants about COVID-19, the greater the fear of getting the virus, and the greater the extent of negative emotions, the higher the score on the DOCS scale (table 4).

Associations of BVS

According to multiple linear regression analysis, older participants, those with higher educational and socioeconomic status, and patients with physical or/and mental illness showed higher scores in significant BVS dimensions, in comparison to healthy individuals.

Negative emotions, insecurity about financial matters, and the fear of being contaminated by the virus, are positively correlated with BVS scores (table 5).

Discussion

The present study evaluated the impact of the COVID-19 outbreak and the imposed measures on QoL and mental health of the general population in the Region of Attica, Greece. In particular, it examined its effect with reference to QoL, stress-anxiety and, depression symptomatology as well as contamination obsessions/ decontamination compulsions, and degree of body vigilance.

Men, older people, singles, those with lower socioeconomic status, and participants with physical or/ and mental illness exhibited lower levels in certain QoL domains. These findings are in line with the results of research in China demonstrating that health-related quality of life in the general population deteriorated significantly with aging, chronic disease, and lower income.[20] This can be explained by the fact that the elderly are affected disproportionately by the pandemic because

they constitute a high-risk group for developing severe illnesses.[21] Also it seems that elderly people have a poor QoL associated with restrictive measures.[22] With reference to the differential effect of the pandemic on men and women, contrary to our findings, Italian research showed that women had an overall worse psychological, physical, and environmental QoL during the pandemic compared to men.[23] Our findings are also consistent with the results of other studies in Saudi Arabia and Morocco, according to which people with chronic medical conditions reported significantly lower QoL scores during the COVID-19 pandemic.[24,25] Accordingly, another study concerning US young adults during the initial months of the COVID-19 pandemic, showed a deteriorated health-related QoL among those with either a suspected or reported mental health diagnosis.[26]

As expected, the wider the extent of negative emotions arising from the pandemic and the restrictive measures, the more likely the occurrence of a low level of QoL. Also, the higher the levels of depression, stress, and of body vigilance, the more likely it was that the QoL would decline. In accordance with the results of our study, in a cross-sectional survey in Saudi Arabia, it was demonstrated that participants who had experienced anxiety, depression, and stress were at an increased risk of exhibiting lower levels of QoL.[24]

With reference to the association of depression-anxiety-stress with sociodemographic characteristics, those who resided alone and those with a lower educational and socioeconomic status seemed to exhibit higher levels of stress. Moreover, it was observed that the lower the educational level of the participants, the higher the possibility to have depressive symptomatology. Our findings are in line with the results of some other studies in Greece[27,28] and in Mexico,[29] according to which, persons with lower educational levels were more likely to develop depressive and anxiety symptomatology during the pandemic period. Also, participants who suffered from physical or/and psychiatric disorders were more likely to exhibit higher levels of anxiety and stress. These findings are in accordance with the results of an Italian study[30] which indicate that persons with a medical history were more likely to have higher scores of anxiety and depression.

According to our findings, the higher the negative feelings due to COVID-19 and the higher the fear of contamination, the higher the possibility of developing depression, anxiety, and stress. This finding is in line with other Greek studies which indicated that young people who worried more about being contaminated by COVID-19, were more likely to develop psychological distress.[31] Similarly, according to other studies,

Table 3. Multiple linear regression analysis with DASS-21 dimensions dependent variables and sociodemographic characteristics and stressors related to COVID–19 as predictors.

		β+	SE++	b‡	P
Dependent: DASS-21 Depression					
Educational status		–0.20	0.09	–0.10	0.033
Group	Healthy (reference)				
	Patients with psychiatric illness	2.13	0.54	0.15	<0.001
	Patients with physical illness	0.76	0.37	0.08	0.041
	Patients with psychiatric and physical illness	3.55	0.64	0.21	<0.001
Fear of being contaminated		0.38	0.17	0.10	0.030
Negative feelings due to pandemic/restrictive measures		1.10	0.14	0.30	<0.001
Dependent: DASS-21 Anxiety					
Educational status		–0.30	0.09	–0.15	0.001
Living circumstances	Alone (reference)				
	With others	–0.76	0.35	–0.09	0.032
Group	Healthy (reference)				
	Patients with psychiatric illness	2.34	0.50	0.18	<0.001
	Patients with physical illness	0.59	0.34	0.07	0.083
	Patients with psychiatric and physical illness	3.33	0.59	0.21	<0.001
Fear of being contaminated		0.63	0.16	0.18	<0.001
Fear of beloved ones being contaminated		0.35	0.17	0.10	0.035
Negative feelings due to pandemic/restrictive measures		0.70	0.13	0.20	<0.001
Dependent: DASS-21 Stress					
Educational status		–0.31	0.11	–0.13	0.004
Socioeconomic status		–0.46	0.22	–0.09	0.040
Group	Healthy (reference)				
	Patients with psychiatric illness	2.16	0.61	0.13	<0.001
	Patients with physical illness	0.68	0.42	0.06	0.106
	Patients with psychiatric and physical illness	3.18	0.72	0.16	<0.001
Accurate information about COVID-19	No (reference)				
	Yes	–1.17	0.42	–0.10	0.006
Fear of being contaminated		0.49	0.20	0.12	0.012
Fear of beloved ones being contaminated		0.52	0.20	0.12	0.011
Negative feelings due to pandemic/restrictive measures		1.31	0.16	0.31	<0.001
Dependent: Total DASS-21					
Educational status		–0.82	0.25	–0.14	0.001
Living circumstances	Alone (reference)				
	With others	–2.00	1.01	–0.08	0.049
Socio–economic status		–1.09	0.52	–0.08	0.036
Group	Healthy (reference)				
	Patients with psychiatric illness	6.67	1.43	0.17	<0.001
	Patients with physical illness	2.02	0.98	0.08	0.039
	Patients with psychiatric and physical illness	10.04	1.69	0.21	<0.001

Continues

Table 3. Continued.

		β+	SE++	b‡	P
Accurate information about COVID–19	No (reference)				
	Yes	−2.07	0.98	−0.07	0.035
Fear of being contaminated		1.51	0.46	0.15	0.001
Fear of beloved ones being contaminated		1.19	0.48	0.11	0.013
Negative feelings due to pandemic/restrictive measures		3.10	0.37	0.31	<0.001

+regression coefficient ++Standard Error ‡standardized regression coefficient
Note: only significant variables are presented

Table 4. Regression analysis with the total DOCS score as dependent variable and sociodemographic characteristics and stressors related to COVID-19 as predictors.

		β+	SE++	b‡	P
Educational status		−0.24	0.08	−0.11	0.002
Monthly income		0.22	0.11	0.07	0.042
Group	Healthy (reference)				
	Patients with psychiatric illness	2.37	0.49	0.17	<0.001
	Patients with physical illness	0.84	0.34	0.09	0.014
	Patients with psychiatric and physical illness	2.13	0.59	0.12	<0.001
Frequency of getting information		0.66	0.17	0.14	<0.001
Fear of being contaminated		1.40	0.13	0.37	<0.001
Negative feelings due to pandemic/restrictive measures		0.65	0.13	0.17	<0.001

+regression coefficient ++Standard Error ‡standardized regression coefficient
Note: only significant variables are presented

the perceived high risk of contracting the virus as well as the fear and anxiety about COVID-19 are associated with high levels of depression and stress.[32,5,6] Our participants who had precise information from the media about COVID-19 had a lower score of depression and stress. This finding is in line with other studies, according to which higher satisfaction with the health information concerning COVID-19 was associated with a lower psychological impact of the outbreak.[33,29]

In reference to contamination obsession and decontamination compulsions, our findings indicate that unhealthy participants and those with higher incomes were more likely to develop OCS. In the same direction, according to other studies persons with mental disorders[34] and higher income groups were more likely to exhibit higher levels of OCS during the pandemic situation.[35] It appears that rich people are probably more "careful" and value their lives more than the less financially privileged.

Also, the more negative emotions (such as fear) the participants developed due to the pandemic, the more

likely they were to develop OCS. This is consistent with previous reports maintaining that obsessions and compulsions (such as washing rituals) were often motivated by fear of contracting a disease.[36,37]

Regarding body vigilance, our findings indicated that older participants, those with higher educational status, and those suffering from mental or/and physical illness were more likely to develop hypochondriacal symptomatology. In accordance with these findings, other study results indicated that persons with past or present psychiatric illnesses had greater sensitivity to and awareness of their body sensations.[38]

The great extent of negative emotions developed, the fear of contamination by the virus, and the high degree of financial insecurity seems to have intensified hypochondriacal symptomatology. These findings are consistent with the results of other studies[39,7] that revealed a positive relationship between excessive concern about COVID-19 and health anxiety.

In conclusion, the more negative feelings that the participants developed due to the COVID- 19 pandemic,

Table 5. Multiple regression analysis with BVS as dependent variable and sociodemographic characteristics and stressors related to COVID–19 as predictors.

		β+	SE++	b‡	P
Dependent: BVS Attentional focus on bodily sensations					
Age		−0.02	0.01	−0.16	<0.001
Group	Healthy (reference)				
	Patients with psychiatric illness	0.96	0.35	0.11	0.006
	Patients with physical illness	0.84	0.26	0.14	0.001
	Patients with psychiatric and physical illness	1.76	0.44	0.16	<0.001
Fear of being contaminated		0.65	0.09	0.28	<0.001
Insecurity due to economic matters		0.16	0.08	0.07	0.048
Dependent: BVS Perceived sensitivity to changes in bodily sensations					
Age		−0.03	0.01	−0.18	<0.001
Socioeconomic status		−0.35	0.12	−0.11	0.003
Group	Healthy (reference)				
	Patients with psychiatric illness	0.91	0.35	0.10	0.009
	Patients with physical illness	0.81	0.26	0.13	0.002
	Patients with psychiatric and physical illness	2.20	0.44	0.20	<0.001
Fear of being contaminated		0.77	0.09	0.32	<0.001
Dependent: BVS Average amount of time spent attending to bodily sensations					
Age		−0.01	0.01	−0.08	0.050
Group	Healthy (reference)				
	Patients with psychiatric illness	0.76	0.33	0.09	0.025
	Patients with physical illness	0.97	0.25	0.16	<0.001
	Patients with psychiatric and physical illness	1.71	0.43	0.16	<0.001
Fear of being contaminated		0.80	0.09	0.34	<0.001
Dependent: BVS Attention to 15 sensations					
Educational status		0.10	0.04	0.09	0.028
Group	Healthy (reference)				
	Patients with psychiatric illness	1.20	0.28	0.17	<0.001
	Patients with physical illness	0.57	0.20	0.11	0.004
	Patients with psychiatric and physical illness	0.07	0.35	0.12	0.002
Fear of being contaminated		0.30	0.09	0.16	0.001
Fear of beloved ones being contaminated		0.25	0.10	0.12	0.009
Negative feelings due to pandemic/restrictive measures		0.40	0.08	0.21	<0.001
Dependent: BVS Total score					
Age		−0.08	0.02	−0.17	<0.001
Group	Healthy (reference)				
	Patients with psychiatric illness	3.91	1.06	0.14	<0.001
	Patients with physical illness	3.27	0.80	0.16	<0.001
	Patients with psychiatric and physical illness	7.00	1.36	0.20	<0.001
Fear of being contaminated		2.83	0.29	0.37	<0.001

+regression coefficient ++Standard Error ‡standardized regression coefficient
Note: only significant variables are presented

the higher the possibility of developing depression, anxiety, stress, obsessive-compulsive and hypochondriacal symptomatology. These conditions in turn seem to contribute to the deterioration of QoL.

The main limitation of this study is that the cross-sectional design used limits drawing conclusions regarding causality, therefore further longitudinal studies could capture the ongoing psychological impact of the COVID-19 pandemic and the related effect on QoL over a longer duration of time. Such a longitudinal study is scheduled to be published soon. Also, another limitation is that the random population, specifically targeted the Attica region excluding the rest of Greece, does not constitute a national representation.

A positive aspect of our work is that it included the study of the impact of the pandemic not only with reference to depression, anxiety, and stress (which has been the subject of most studies), but also with reference to obsessive-compulsive and hypochondriacal symptomatology, as well as to QoL. Quality of life is a broad multi-dimensional indicator and "can be used in daily clinical practice for the assessment of therapeutic interventions and for the health need assessment of populations",[40,41] especially in response to disasters and crises such as the COVID-19 pandemic. The findings of our study have demonstrated that the greater the extent of negative emotions due to the pandemic the lower the QoL scores. Also, our study shows the significant effect of negative emotions due to the pandemic and fear of contamination on hypochondriacal and obsessive-compulsive symptomatology, a very important finding since only a few researchers[7,8] have addressed this issue.

Moreover, the sample of our study included not only healthy subjects but also patients with physical and/or mental diseases, thus rendering possible the comparison between these groups. Finally, another positive feature of our study was that it was carried out with telephone interviews, (rather than internet questionnaires), each interview lasting almost one hour and thus allowing clarification of concepts and issues related to the questionnaires.

The findings of this and other related studies should be taken into consideration by the authorities so that appropriate interventions to improve quality of life can be designed and actions to prevent and treat psychopathological conditions associated with the COVID-19 pandemic can be implemented.

The recent Athens Mental Health Summit Declaration of the WHO European Region (July 2021) "on actions required to address the impact of the COVID-19 pandemic on mental health" is a good response to this need. However, this is just a starting point. It should be followed by substantial attention to the needs and adequate and consistent funding. Finally, vulnerable population groups suffering from mental or/and physical diseases will certainly require specific and targeted support to cope with the negative impact of disasters such as the COVID-19 pandemic on their mental health and quality of life.

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Η επίδραση της πανδημίας COVID-19 στην ψυχική υγεία και την ποιότητα ζωής του γενικού πληθυσμού στην Αττική

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ΠΕΡΙΛΗΨΗ

Με την παρούσα μελέτη επιδιώκεται η εκτίμηση της επίδρασης στρεσογόνων παραγόντων που σχετίζονται με την πανδημία COVID-19 στην ψυχική υγεία και την ποιότητα ζωής (ΠΖ) του γενικού πληθυσμού σε περιοχές της Αττικής. Το δείγμα της μελέτης, που επελέγη με τυχαία δειγματοληψία, αποτέλεσαν 602 άτομα του γενικού πληθυσμού, κάτοικοι διαφορετικών περιοχών της Αττικής, εκ των οποίων 389 (64,6%) ήταν γυναίκες και 213 (35,4%) άνδρες. Η έρευνα πραγματοποιήθηκε με τηλεφωνικές συνεντεύξεις κατά το πρώτο κύμα της πανδημίας. Τα ερωτηματολόγια που χρησιμοποιήθηκαν ήταν: το Ερωτηματολόγιο Ποιότητας Ζωής του Παγκόσμιου Οργανισμού Υγείας (WHOQOL-BREF), το Ελληνικό Ερωτηματολόγιο Μέτρησης της Κατάθλιψης, του Άγχους και του Στρες (DASS-21), η Κλίμακα εστίασης της προσοχής σε σωματικές αισθήσεις-συμπτώματα (BVS), η Πολυδιάστατη Κλίμακα Ιδεοψυχαναγκαστικής συμπτωματολογίας (Κατηγορία 1: ιδεοληψίες μόλυνσης και καταναγκασμοί απολύμανσης) (DOCS) και ένα δελτίο κοινωνικοδημογραφικών χαρακτηριστικών και ερωτήσεων που αφορούν σε στρεσογόνους παράγοντες σχετιζόμενους με την πανδημία της COVID-19. Σύμφωνα με τα αποτελέσματα της μελέτης: (α) Όσο μεγαλύτερη είναι η έκταση των αρνητικών συναισθημάτων εξαιτίας της πανδημίας και των περιοριστικών μέτρων που επεβλήθησαν για τη μείωση της εξάπλωσης της πανδημίας, τόσο υψηλότερα είναι τα επίπεδα της κατάθλιψης, του άγχους, του στρες, της ιδεοψυχαναγκαστικής συμπτωματολογίας, της εστίασης στα σωματικά συμπτώματα και τόσο χαμηλότερο είναι το επίπεδο της ΠΖ, (β) Ο φόβος μόλυνσης από τον ιό φαίνεται να επιδείνωσε την κατάθλιψη, το άγχος και το στρες (DASS-21), την ιδεοψυχαναγκαστική (DOCS) και την υποχονδριακή (BVS) συμπτωματολογία, (γ) Οι ανεξάρτητες μεταβλητές της κατάθλιψης, του στρες, του άγχους, της ιδεοψυχαναγκαστικής και της υποχονδριακής συμπτωματολογίας φαίνεται να συσχετίστηκαν αρνητικά και να επέδρασαν στην ποιότητα ζωής του πληθυσμού, (δ) Οι πιο ευάλωτες ομάδες όσον αφορά στην ΠΖ και την ψυχική υγεία ήταν τα άτομα που έπασχαν από ψυχική ή/και σωματική νόσο, οι ηλικιωμένοι, οι άνεργοι κατά την περίοδο του lockdown, τα άτομα χαμηλού εκπαιδευτικού επιπέδου και χαμηλής κοινωνικοοικονομικής κατάστασης και όσοι ζούσαν μόνοι τους. Εν κατακλείδι, τα αρνητικά συναισθήματα που σχετίζονται με την πανδημία της COVID-19 και τα περιοριστικά μέτρα είχαν πιθανώς σοβαρό αρνητικό αντίκτυπο στην ψυχική υγεία και στην ΠΖ του πληθυσμού. Το εύρημα αυτό καθώς και άλλα παρόμοια ερευνητικά πορίσματα θα πρέπει να αξιοποιηθούν από τις αρχές και τους υπεύθυνους λήψης αποφάσεων, για την πρόληψη και την αντιμετώπιση των επιπτώσεων της πανδημίας. Μιας πανδημίας που δυστυχώς συνεχίζεται και δημιουργεί ήδη προβληματισμό ως προς την ανάγκη εκ νέου εφαρμογής αυστηρών περιοριστικών μέτρων. Κάτω από αυτό το πρίσμα, εργασίες όπως η παρούσα μπορεί να αποδειχθούν χρήσιμες.

ΛΕΞΕΙΣ ΕΥΡΕΤΗΡΙΟΥ: Στρεσογόνοι παράγοντες COVID-19, ποιότητα ζωής, κατάθλιψη, στρες, ιδεοληψίες μόλυνσης και καταναγκασμοί απολύμανσης, εστίαση στα σωματικά συμπτώματα.

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