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Determinants of quality of life among individuals seeking mental health care after termination of state of emergency due to the coronavirus disease 2019 pandemic

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Abstract

Prompted by the need to measure the impact of the coronavirus disease 2019 on main areas of quality of life related to mental health (MH), the COV-19—impact on quality of life (COV19-QoL) scale has been developed recently. We measured how patients seeking face-to-face MH care perceived the coronavirus disease 2019 impact on QoL and how socio-demographic factors, stress, and personality contributed to QoL in this diagnostically diverse population.

Patients aged 18 to 65 years (n = 251) who came for the first time to the outpatient units during the 6-week index-period (May 21–July 1, 2020) were included. The cross-sectional assessment involved sociodemographic variables, working diagnosis, personality traits (7-dimension model, including HEXACO and DELTA), stress (list of threatening experiences and proximity to virus), and COV19-QoL.

The perceived impact of the pandemic on QoL was above the theoretical mean of a 5-point scale (COV19-Qol = 3.1 ± 1.2). No association between total COV19-QoL score, sociodemographic parameters, and working diagnoses was found in the present sample. After testing whether positional (threatening experiences), or dispositional (personality) factors were predominant in the perceived impact of COV-19 on QoL, significant predictors of the outcome were personality traits Disintegration (B = 0.52; $P < .01$) and Emotionality ($B = 0.18$; $P < .05$).

It seems that pervasiveness and uncertainty of the pandemic threat triggers—especially in those high on Disintegration trait—a chain of mental events with the decrease of QoL as a final result. Present findings could be used to establish a profile of MH help seeking population in relation to this biological disaster, and to further explore QoL and personality in different contexts.

Abbreviations: A = agreeableness, BHI - 24 = brief HEXACO inventory, C = conscientiousness, COV19-QoL = COV-19 impact on quality of life, COVID-19 = The coronavirus disease 2019, E = emotionality, F = female, GP = general practitioner, H = honesty-humility, IMH = Institute of Mental Health, LTE = list of threatening experiences, M = male, MH = mental health, O = openness to experience, QoL = quality of life, X = eXtraversion.

Keywords: the coronavirus disease 2019, mental health, pandemic, personality, quality of life, stress

1. Introduction

The coronavirus disease 2019 (COVID-19) emerged in late 2019. It spread worldwide through 2020. The state of emergency in Serbia was declared on March 15, 2020, due to the coronavirus epidemic in Serbia, lasting for 7 weeks. This biological disaster increased the impact of risk factors for mental health problems.[1,2] Together with unpredictability and uncertainty, lockdown and physical distancing lead to social isolation, limited access to basic services, and decreased family and social support, with possible negative effects on quality of life (QoL).

Prompted by the need to measure the impact of COVID-19 on main areas of the QoL related to mental health, the COV-19—impact on quality of life (COV19-QoL) scale has been recently developed.[3] Validation of the scale was conducted on non-clinical and clinical samples (severe mental illness) in the Balkan region, showing that the perceived COVID-19 impact on QoL was higher in the general population sample in comparison to psychiatric patients.[3] During the first wave of pandemic with very strict epidemiological measures and prolonged lockdown periods, the non-clinical sample's primary concern was physical health, not mental health. One can speculate that greater impact on mental health (MH) might be experienced in the aftermath of the pandemic.

The impact of COV-19 on QoL on the population seeking MH help at the moment when pandemic state of emergency was terminated is unknown. One way to fill in this gap could be to focus the population seeking MH for the first time. Therefore, the goal of the present study was to measure how patients seeking face-to-face MH care for the first time after the termination of pandemic state of emergency perceived the impact of COVID-19 on their QoL. Moreover, this study explored how different socio-demographic factors, stress, and personality contributed to the QoL in this diagnostically diverse population. Our results may assist healthcare professionals in safeguarding the psychological well-being of patients seeking MH care in relation to the COVID-19 pandemic.

2. Methods

This cross-sectional study was conducted immediately after the termination of the pandemic emergency state and as soon as the Ethical Board of Institute of Mental Health (IMH) in Belgrade approved the protocol. The study was approved by the IMH Ethics Committee (Decision No 2078/1). All patients that came for the first time to the outpatient units for adults and adolescents within the IMH in the index period of 6 weeks were invited to participate by completing the self-report questionnaire (described below). They were informed of the study objective and the data collection process and were invited to give written consent to participate. After filling in the questionnaire, they underwent standard clinical procedures. The IMH provides highly specialized outpatient and inpatient healthcare services in the field of adult psychiatry, developmental psychiatry, and addiction. Patients in need of assistance are referred by their general practitioner (GP) or a psychiatrist at the primary health center. Additionally, the services could be recommended by other specialists and if the institution would provide more adequate care (when in need of hospitalization). Finally, the patients can access the services and seek help on their own initiative.[4]

The following self-report questionnaire was used in addition to the regular examination: COV19-QoL Scale[3]—a scale aiming at capturing the effect of COVID-19 on people's QoL, which is not primarily designed for people diagnosed with COVID-19. Using

6 items, this scale covers main areas of QoL during the preceding 7 days in relation to MH: patients' feelings about the impact of the current pandemic on their QoL in general; participants' perceptions of possible mental deterioration; physical health deterioration experienced due to perceived different levels of risk of being infected; levels of anxiety and depression due to the pandemic; and the extent to which patients perceive their personal safety is now in danger. All items included a 5-point Likert scale (1—"totally disagree" to 5—"completely agree") and assessed a period of the preceding 7 days. Total scores were calculated by averaging the scores on all the items. A higher score indicated a greater perceived impact of the pandemic on one's QoL. The sample recruited for evaluation of validity and reliability of the scale[3] included a subsample from Serbia.

Basic personality assessment—Honesty-Humility, Emotionality, eXtraversion, Agreeableness, Conscientiousness, and Openness to Experience traits—HEXACO model,[5] complemented by Disintegration[6] has been used to integrate the domains of normal and abnormal personality by adopting a model consisting of 6 HEXACO-like dimensions plus a dimension of dissociation (disintegration).[7] The 24 item Brief HEXACO Inventory (BHI-24) contains 24 items (4 per scale) and operationalizes the HEXACO personality model. This inventory is the first short questionnaire operationalization of the 6-dimensional HEXACO personality model. The Serbian adaptation of BHI-24 was applied for the first time by Dinic.[8] The back-translation of the Serbian adaptation of BHI-24 was approved by Prof. De Vries, who permitted BHI-24 use for the present study. The DELTA was primarily devised to explore disintegrative variations in non-clinical populations and has so far been only used in clinical settings for the assessment of personality disorders. Several versions of this instrument are available, the 114-, 50-, 20-, and 10-item versions. For the current study we used DELTA short form 10-item measure of the Disintegration. Smaller versions extract the questions yielding the greatest variance in the larger versions of the instrument. The questions on the Likert scale range from 1 (strongly disagree) to 5 (agree completely), with several of the questions being reversely keyed. As the practical application of existing standard personality measures has been limited by their length, we decided to use short forms of both personality questionnaires.

Lifetime traumatic events[9]—the list of threatening experiences (LTE) questionnaire is frequently used to assess stressful events. This list consists of 12 categories of common life events that are highly likely to be stressful, such as suffering from a serious illness or having a major financial crisis. All questions included yes/no answers. Sum of the numbers of life events before the pandemic was used for further analyses of lifetime trauma and during the pandemic (LTE-lifetime/distal, and LTE-current/proximal threatening events). Additionally, a generic instrument designed for the purposes of the present study consisted of 6 questions: Have you been infected by COVID-19 and hospitalized?; Have you been infected with COVID-19 but not hospitalized (no symptoms)?; Have you been isolated due to COVID-19 risk?; Was anyone from your immediate circle (housemates and closest family members) infected by COVID-19 and hospitalized?; Have you been infected with COVID-19 but not hospitalized (no symptoms)?; Has someone who is very close to you died due to COVID-infection? All questions were followed by yes/no answers. Similarly to LTE, the sum of the numbers of these events was used and the list of proximity to virus experiences score was calculated.

After collecting questionnaires from the respondents, we searched for additional data using standard medical charts: socio-demographic data (age; sex; years of education—number of years; place of living—Belgrade/other; marital status—married or living with partner/ other; employment—employed/other), clinically relevant data, working diagnosis (using International Classification of Diseases, 10th revision) after the initial examination by specialist (in the cases where patients had multiple diagnoses, only the first diagnosis was taken into account). Regular diagnostic evaluation and treatment decisions were not influenced by the present study.

For those who did not consent to completing the questionnaire, we collected only sociodemographic data age, sex, years of education, and place of living from the medical documentation to further analyze respondents versus non-respondents and whether the study sample was representative of the IMH MH help seeking population.

3. Analysis

The data were first entered by the study researchers into SPSS (Armonk, NY: IBM Corp) for Windows where the appropriate analyses were carried out. Descriptive statistical values were used to summarize participants' demographic and clinical characteristics (minimum and maximum values, medians and means/ standard deviations). Pearson and Spearman correlation analysis was used to estimate the direction and magnitude of the relationships of items. The one-way analysis of variance was used to determine any statistically significant differences between the diagnostic groups. To assess significant predictors of QoL (dependent variable) we used linear regression modeling with potential predictors (personality traits, threatening experiences).

4. Results

During the index period, 251 adults aged 18 to 65 years and Serbian speaking population visited the IMH for the first time in life. Among them, 68.9% accepted to complete the study questionnaire (n = 173) and answered the questions in the waiting room (before further examination by a clinical psychiatrist). The analyses of sociodemographic characteristics between responders and non-responders yielded no statistically significant differences in the following parameters: sex (male vs female: 40.0% vs 44.6%, respectively; P = .513), age (M vs F: 39.6 ± 13.1 vs 41.1 ± 13.6 years of age, respectively; P = .44), education (M vs F: 12.8 ± 2.4 vs 12.3 ± 2.1 years of education, respectively; P = .198) and living place (M vs F: 86% vs 77% living in Belgrade, respectively; P = .09). The results that follow comprised only complete cases (n = 133). Those with missing data on the questionnaires, and 1 patient with mental retardation were excluded. Socio-demographic and clinical characteristics of the final sample are presented in Table 1.

4.1. COV-19—impact on quality of life and relation to socio-demographic and clinical characteristics

Cronbach alpha coefficient of the scale was α = 0.91. Cronbach alpha if item deleted ranged from 0.882 to 0.921. All inter-correlations of the COV19-QoL scale items were significant at P < .001 level and of moderate intensity (r coefficient range 0.475–0.676). Based on the figures shown in Table 2, due to the spread of Coronavirus our participants had the highest scores on

2 items—perception of the mental health deterioration and feeling more tense than before, while the lowest perceived impact was found for personal safety. The perceived impact is on the theoretical mean of a 5-point scale and the range of participants' scores on each item was 1 to 5. The associations of COV-19 impact on QoL total score with socio-demographic variables were not significant for either age or education (Pearson r = 0.050; P = .572 and Spearman rho = –0.024; P = .804, respectively), nor for sex (F 3.1 ± 1.2 vs M 3.0 ± 1.1; P = .714), marital status (married 3.1 ± 1.4 vs other 3.0 ± 1.4; P = .624), employment (employed 3.1 ± 1.2 vs other 3.0 ± 1.1; P = .819), and living place (Belgrade 3.0 ± 1.2 vs other 3.2 y ± 1.1; P = .624). The item by item analysis: in comparison to the younger group (n = 69), older patients (age 40+; n = 63) had higher scores for the item "6" (1.9 ± 1.5 and 2.7 ± 1.1, P = .00). All other group differences involving socio-demographic parameters and COV19-QoL items were not significant.

Table 1

Socio-demographic and clinical characteristics of the sample.

Socio-demographic characteristics (n = 133)	
Age, yrs	39.6 ± 13.2
Sex (% male)	40.2
Education (in years)	12.8 ± 2.4
Place of living (% Belgrade/other)	89.6/10.4
Employment (% employed/student, retired, non-employed)	53.8/46.2
Marital status (% married/single, divorced, widowed)	39.3/60.7
ICD-10* diagnostic category at the first contact (%)	
Mental/behavioral disorders due to psychoactive substance use F10–19	15.5
Psychosis spectrum disorders (non-affective and affective) F20–31	11.9
Unipolar/ depressive mood disorders F32–39	25.0
Neurotic, stress-related and somatoform disorders F40–49	29.7
Other diagnoses (F00–09; F50–69; Z-diagnosis)	17.9

* International Classification of Diseases, 10th revision.

Table 2

Quality of life, stress, exposure, and personality.

Quality of life	
COV-19 QoL total, mean ± SD (median)	3.1 ± 1.2 (3)
I think my quality of life is lower than before.	3.0 ± 1.4 (3)
I think my mental health has deteriorated.	3.3 ± 1.4 (4)
I think my physical health may deteriorate.	3.2 ± 1.4 (3)
I feel more tense than before.	3.4 ± 1.4 (4)
I feel more depressed than before.	3.2 ± 1.4 (3)
I feel that my personal safety is at risk	2.3 ± 1.4 (2)
Threatening experiences, median (range; % with no exposure)	
LTE—lifetime	2 (0–10; 14.3%)
LTE—current	1 (0–8; 42.1%)
COV-E	0 (0–3; 90.2%)
Personality	
Honesty—H	3.8 ± 0.8
Emotionality—E	3.2 ± 0.8
Extroversion—X	3.4 ± 0.8
Agreeableness—A	3.1 ± 0.7
Conscientiousness—C	3.6 ± 0.8
Openness—O	3.3 ± 0.7
Disintegration—D	2.6 ± 1.0

COV-E = the list of proximity to virus experiences; LTE = the list of threatening experiences; COV-19 impact on quality of life.

Table 3

Correlations among personality traits, traumatic experiences, and quality of life.

	H	E	X	A	C	O	D	COV-E	LTE-current	LTE-lifetime
QoL	0.07	0.33**	−0.22*	−0.20*	−0.25**	0.00	0.57**	0.17	0.18*	0.10
H		0.19*	0.01	0.15	0.02	−0.18*	−0.04	−0.01	−0.12	−0.06
E			−0.26**	−0.26**	0.01	0.04	0.30**	0.22**	0.18*	0.04
X				0.02	0.37**	0.27**	−0.45**	−0.15	−0.20*	0.07
A					0.06	−0.10	−0.22**	0.04	−0.13	−0.12
C						0.30**	−0.41**	0.01	−0.13	−0.01
O							0.01	0.10	0.09	0.17*
D								0.14	0.16	0.06
COV-E									0.19*	−0.04
LTE-current										0.31**

A = Agreeableness, C = Conscientiousness, D = Disintegration, E = Emotionality, H = Honesty, O = Openness, QoL_average = Quality of life, X = Extroversion; COV-E – The list of proximity to virus experiences; LTE - The list of Threatening Experiences.
* $P < .05$ (2-tailed).
** $P < .01$ (2-tailed).

In relation to the clinical characteristics and working diagnosis, COV-19—impact on QoL total score was not significantly different among the 5 observed large diagnostic groups (one-way analysis of variance $F [4, 132] = 0.677$; $P = .609$). QoL mean ± standard deviation for the diagnostic groups was as follows: dependence disorders 3.0 ± 1.1; Psychosis spectrum disorders 3.0 ± 1.2; Depressive disorders 3.3 ± 1.1; Anxiety disorders 2.9 ± 1.2, and other disorders 3.0 ± 1.1.

4.2. Threatening experiences, personality and COV-19—impact on quality of life

Descriptive statistics of stress measurements and personality measurements are shown in Table 2. Correlations among the variables are presented in Table 3.

4.3. Model

We intend to test whether one of the 2 possible effects (positional—threatening experiences or dispositional—personality) was predominant in the perceived impact of COV-19 on QoL in the mental health care seeking population. Having in mind the relatively small sample size, we entered only those predictor variables that correlated significantly with QoL, that is, A, X, E, C, D, and LTE-current in the hierarchical regression model. In the first block only LTE-current was entered, while personality traits were entered in the second block of the analysis. Multiple correlation between predictors and QoL was 0.61, $F(6,126) = 12.38$, $P < .001$. The structure of the regression function is presented in Table 4. While LTE-current was a significant predictor of QoL in the first step, in the final structure of the regression function the only significant predictors were Disintegration and Emotionality.

5. Discussion

The present study used a novel instrument to assess QoL in individuals seeking professional MH help after termination of the pandemic state of emergency (the second quarter of 2020). The COV19-QoL scale reliability was estimated as very good and its total score in our sample was higher than previously reported[3] in the general population and in clinical population samples. The most prominent complaints in our sample were feeling tense and

thinking that the mental health has deteriorated due to the spread of coronavirus.

Our analyses of the association between socio-demographic characteristics and the QoL total score did not reveal significant results for any of the variables. However, different surveys, for example, one that was performed after the lockdown in Austria[10] showed that COVID-19 pandemic and lockdown were particularly stressful for younger adults (<35 years), women and people without work. Moreover, Repišti et al[3] found that age was associated with some of the items in both non-clinical and clinical samples. For example, in the non-clinical sample, more negatively perceived impact was associated with a younger age (all negative correlations emerged, with the exception of items considering COV19-QoL personal safety), while in the clinical sample the level of perceived negative impact of the pandemic correlated with older age. When we performed an item by item analysis in the 2 age groups, only the concerns related to the risk for personal safety were higher in the older MH help seeking population.

The perceived negative impact of the pandemic on QoL showed no significant variations across mental health conditions in our sample. Many studies have reported a high correlation

Table 4

Predicting quality of life from personality and threatening experiences.

	Quality of life	
	Block 1	Block 2
	β	β
LTE-current	0.18*	0.07
E		0.18*
X		0.10
A		−0.02
C		−0.06
D		0.52**
F	4.27*	13.59**
R^2	0.03	0.37
df1, df2	1, 131	5, 126
DR^2		0.34**

LTE = The list of Threatening Experiences
* $P < .05$.
** $P < .01$.

between depressive symptoms and QoL ratings, suggesting that measuring depressive symptoms would make QoL assessment superfluous.[11] However, according to the literature, although depression affects QoL response, other QoL domains seem to vary independently.[12,13]

Finally, our research has shown that personality factors were of major importance in the perceived impact of COV-19 on QoL. This is not surprising having in mind that personality has been one of the strongest and most consistent predictors for QoL in the general population[14,15] and also an important factor for the perception of stressful events which is considered fundamental for having the required resources to cope in an unexpected situation.[16,17] For example, for the personality space defined by the Big Five, higher levels of extraversion, agreeableness, and conscientiousness were associated with lower self-reported stress, while neuroticism, in turn, was found to be strongly associated with repetitive negative thinking, anxiety, and depression.[17]

Our analyses used a new model to explore basic personality space in relation to COV19-QoL impact, consisting of 7 dimensions, where the HEXACO model[18] was complemented by Disintegration.[6] Emotionality—E, as a trait associated with the fear of physical dangers, higher anxiety in response to threatening events and increased need for emotional support from others, was one of the well-recognized QoL predictors and our study has confirmed this once again. The relationship between neuroticism, which is very similar to E, with decreased health related QoL has sometimes been considered as tautological.[19] On the contrary, to the best of our knowledge, present evaluation is the first to show a relation between Disintegration and QoL. Disintegration is a hierarchically organized, multidimensional behavioral disposition, and all of its facets stem from a tendency to relate events among which there is no connection, that is, a tendency to make false-positive errors resulting in peculiar, distorted cognitions, emotions, and motivations. Of all personality traits, Disintegration has the strongest relationships with conspiracy mentality and intuitive thinking style, while correlating negatively with analytical thinking style.[20] Interestingly, when a recent study explored individuals' reactions to the current COVID-19 threat defined by a similar 7-dimension model, the results found that (ir)rationality and (ir)responsibility for health during the pandemic are rooted in the aforementioned trait.[21] According to Lazarevic et al,[21] Disintegration is closely related to irrational beliefs and behaviors of relevance at the individual (superstition, some cognitive biases), interpersonal (irrational expectations regarding the behavior of partners, family members, friends, colleagues), or social level (conspiracy, world beliefs). Accordingly, high use of the intuitive and low use of the analytical type of information processing seem to be significant determinants of perceived impact of COV-19 on QoL in individuals seeking professional MH help during the pandemic. Thus, one can speculate that recognizing and correcting intuitive, irrational beliefs, and behaviors in MH help seeking individuals would lead to observable improvement in QoL during COVID-19 pandemic, but this assumption is yet to be proven.

5.1. Limitations

Our cross-sectional study has a potential bias since the sample was recruited only in 1 MH center. The sample consisted of adults who were not hesitant to seek professional treatment in MH institution, therefore the results cannot be extrapolated to all

of those in need of MH care but have negative attitudes toward mental health help-seeking, distrust of MH professionals or discomfort to disclose problems in the face-to-face setting due to fear of the infection.

Stigmatization and choosing alternative treatments are other possibilities, alongside structural barriers which could be also associated with pandemic conditions (transportation, appointment availability). However, the comparison between responders and non-responders from our study—in terms of socio-demographic characteristics—yielded no significant differences between the 2 groups, thus the QoL of the sample could be regarded as representative at least for those seeking MH help.

Our findings related to proximity to the virus, number of threatening life events during pandemic, and also the impact of pandemic on QoL should be interpreted having in mind that we assessed our participants at the beginning of the pandemic. The full effect of the pandemic cannot be estimated at this time since the number of events in relation to virus proximity was very low, but the information provided by the present study could be used for further analysis.

6. Conclusions

COV19-QoL scale has the potential to facilitate both clinical work and research on the impact of the current and future pandemics and the present findings could be used to figure out QoL, clinical, and personality profile of the MH help seeking individuals at the beginning of this biological disaster. Although the level of exposure and Emotionality play a role in reacting to the COVID-19 threat, Disintegration plays the crucial role in terms of QoL change. It seems that pervasiveness and uncertainty of the pandemic threat triggers—especially in those high on Disintegration trait—a chain of mental events likely including various types of irrational beliefs, thus deepening further their feelings of confusion, helplessness, magical interpretations, and other Disintegration-related experiences, with the decrease of QoL as a final result.

Author contributions

All authors contributed to the study conception and design, material preparation, and data collection. All authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

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