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Subjective perception of anxiety as PSYCHOSOCIAL effect of COVID-19

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Abstract

Introduction: Every day, people are more or less anxious, but during the SARS-CoV-2 pandemic, this anxiety can be greatly exacerbated.

The aim of this study was to analyze the subjective feelings of anxiety associated with being in quarantine due to infection or suspected infection with SARS-CoV-2.

Material and methods: The study included 138 people from different backgrounds. It was conducted using a survey (Google Form) consisting of fifteen questions. Results were compiled using chi2, Kendall's tau-b, one-way ANOVA analysis of variance with Bonferroni post hoc tests.

Results: The level of experienced anxiety during the quarantine by the subjects was found to be statistically significantly higher compared to its level before and after the quarantine period ($p=0.002$). An increase in somatic symptoms was also observed during isolation (29.0%). Statistical analysis, however, confirmed the relationship between the sex of the subjects and the level of anxiety during and after quarantine ($p<0.05$) - women experienced anxiety slightly more strongly. In addition, younger people experienced higher levels of anxiety before quarantine than older people ($p=0.001$). The study also showed that some subjects felt the need to take sedatives (29.0%) and/or seek psychological/psychotherapeutic help (38.4%) during or after quarantine.

Conclusions: Being in forced isolation has an impact on the severity of anxiety and the maintenance of high anxiety levels even after quarantine is over. These results show the importance of monitoring mental health during (and in relation to) a pandemic.

Keywords: anxiety disorder; quarantine; isolation; SARS-CoV-2; stress

Introduction

Ever since the World Health Organization (WHO) announced the onset of the COVID-19 pandemic [1], the society has been living in constant anxiety. Nowadays, a stressor (a factor that triggers the release of stress hormones [2]) is practically everything - from "just" going out for shopping to watching the daily news or browsing the press, from which we learn about the number of COVID-19 infected, the number of deaths, and the restrictions that are being introduced. The constant tension we are under results in manifestation of physical symptoms such as: decrease of energy; difficulties with concentration, remembering information; changes (increase or decrease) of appetite; loss of current interests; difficult falling asleep, occurrence of nightmares (a disturbing dream in which fear, sadness, repulsion, despair or their combination form the emotional content [3]); a sense of anger, fear, sadness, worry, numbness, frustration; physical reactions of the body to excessive stress (the so-called somatic symptoms [4]); worsening of mental state and mental illnesses [5]. Isolation is a pathological state for the human psyche [6], because man is a herd creature by nature [7]. Forced isolation, caused by contact with a person infected or potentially infected with SARS-CoV-2 [8] generates additional tension caused by concern for health and life of oneself and relatives, a sense of "cutting off" from the outside world, as well as uncertainty related to employment (financial issues), or everyday life.

According to statistics as of March 5, 2021, 394,442 residents of Poland are subjected to forced quarantine [9]. How much influence does the period of staying in isolation have on increasing the level of perceived anxiety? Do the feelings accompanying leaving the place of residence change due to its serving?

Constant feeling of stress and anxiety may develop into anxiety disorders (formerly called neuroses), as well as growing phobias - especially social anxiety disorder. It is completely normal to feel tension during public speeches or an important exam, but there are a number of symptoms that should alert us and make us visit a specialist. These include: fear and avoidance of situations in which one can be judged, analyzing one's own behavior, avoidance of public speaking and spending time with people, fear of making a mistake in a group of people [10]. The vast majority of the above-mentioned symptoms involve contact with people - so it can be concluded that isolation will improve the psychological condition of people in it, especially those who struggle with social phobia. Nothing could be further from the truth. It has been proven that staying too long in solitary confinement can cause the so-called 'cabin fever' (fatigue from prolonged confinement [11]). Dr. Priyanka, Medical Director of Psychiatry explains this phenomenon as follows: " It's not a mental illness or disorder, but more of a psychological condition that arises from the feelings of being alone and stuck in a confined space [...]. Once we start to feel stuck, our mind extrapolates it into several other negative emotions to make us feel that there is no way out of this and that things will only get worse ". Who is most at risk of experiencing it? The reality is that no one is immune to it, especially in the current unusual world situation. Certainly it will be more difficult for extroverts to get over it, because their need for contact with people is only partially satisfied, which leads to a permanent feeling of "under-fulfillment". Cabin fever is not officially recognized as a psychological condition (there is no technically established list of causes or treatments), but it can be accompanied by symptoms such as fatigue, difficulty concentrating, irritability, insomnia, boredom, and restlessness.

The study was conducted to analyze the subjective feelings of anxiety associated with being in quarantine due to infection or suspected infection with SARS-CoV-2.

Material and methods

The study was conducted using the diagnostic survey method and the tool was the author's questionnaire. The study was conducted in March 2021, using Google Forms platform. The open link to the survey was placed in social media groups associating residents of Tarnów and the surrounding area. In total, data were collected from 138 people (women: 74.6%, men 25.4%), aged from 16 to 40 years old, who were in quarantine. Respondents answered questions about anxiety levels before, during, and after quarantine (with the first two periods assessed retrospectively). The majority of respondents were aged 19-25 years (n=86; 62.3%), followed by those aged over 30 years (n=24; 17.4%), 18 years and under (n=18; 13.0%), and 26-30 years (n=10; 7.2%). Statistical analyses used a significance level of $p=0.05$. At the beginning of the survey, participants were informed about aim of the research; at the same time respondents were anonymous. The study was conducted in compliance with ethical principles and good research practice resulting from the Declaration of Helsinki. Respondents had the option to refuse to answering the survey at any points.

Results

As many as 21.0% of the respondents had a diagnosed anxiety disorder (n=29). A significant percentage (n=106; 76.8%) had ever experienced stress-related somatic complaints. As many as 29.0% (n=40) believed that their somatic complaints occurred or were exacerbated while in quarantine. The results show that there is no significant relationship between the diagnosis of anxiety disorders and the perception of somatic disorders ($p>0.05$). However, a very strong significant relationship was found between ever having a history of somatic disorders and knowing what somatic pains are ($p<0.0001$).

The percentage of subjects who felt the need to take sedative medication and/or consult a psychologist/psychotherapist during quarantine was also examined: 29.0% of respondents (n=40) had a need for sedative medication during/after quarantine, and 38.4% (n=53) report feeling the need to consult a psychotherapist/psychologist.

The level of anxiety was assessed according to the 5-point Likert scale, where 1 meant no anxiety at all and 5 meant anxiety impeded daily functioning. The level of experienced anxiety during the quarantine by the subjects was statistically significantly higher compared to its level before and after the quarantine period ($p=0.002$; Tab.I, Fig. I).

Table I. Mean anxiety levels before, during and after quarantine

Anxiety level								
	N	Mean	Standard deviation	Standard error	95% confidence interval for the mean		Minimum	Maximum
					Lower limit	Upper limit		
Before quarantine	138	2.3841	1.21621	.10353	2.1793	2.5888	1.00	5.00
During quarantine	138	2.9058	1.38231	.11767	2.6731	3.1385	1.00	5.00
After quarantine	138	2.4493	1.36736	.11640	2.2191	2.6794	1.00	5.00
In total	414	2.5797	1.34116	.06591	2.4501	2.7093	1.00	5.00

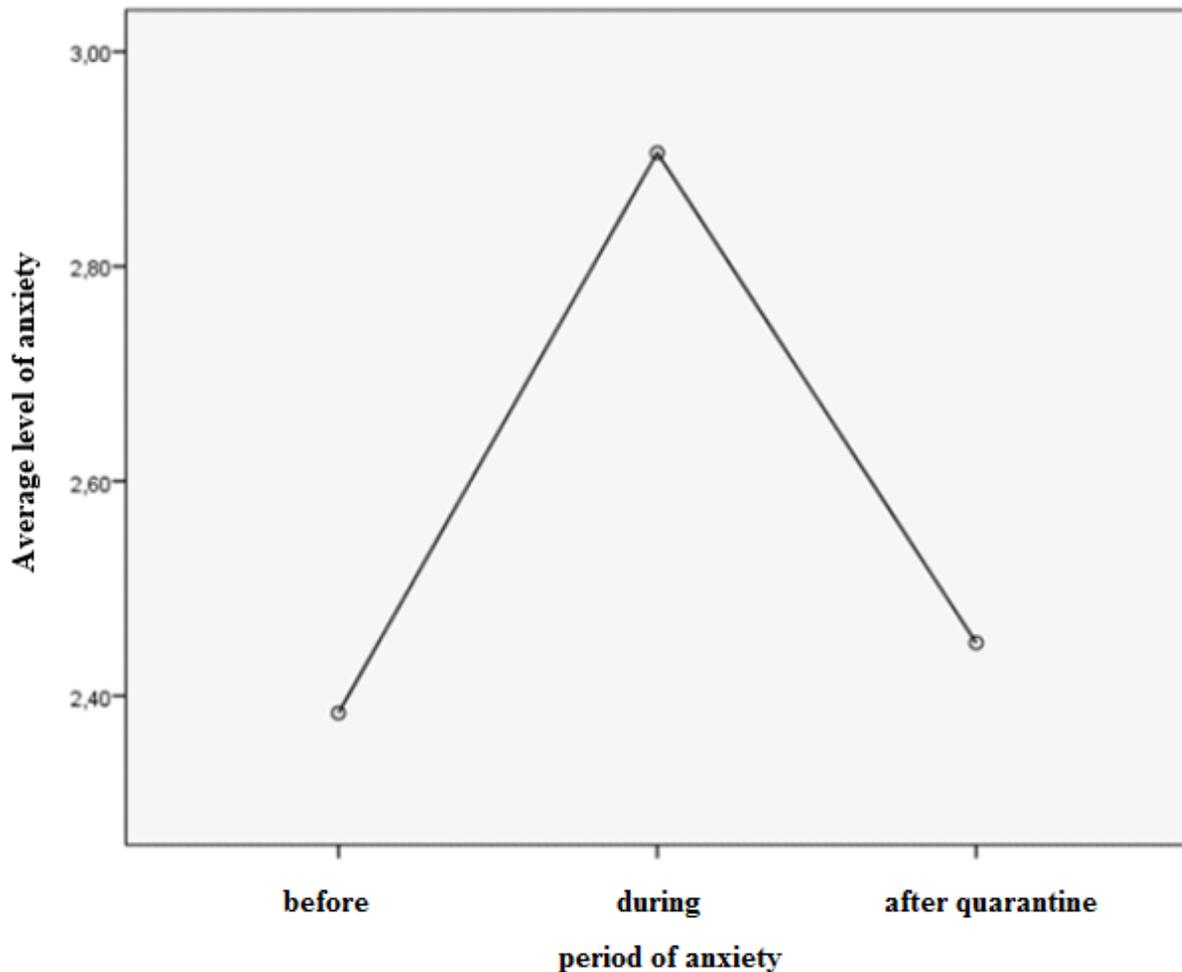


Figure.1. Mean anxiety levels before, during and after quarantine

There was also a statistically significant correlation between anxiety disorder diagnosis and anxiety experience before ($p=0.001$), during ($p<0.0001$) and after the quarantine period ($p<0.0001$). The correlation between these variables after the quarantine period is stronger than before and during the quarantine. Interestingly, subjects without diagnosed anxiety disorders rated the perceived level of anxiety significantly higher during the indicated periods.

The results show that there is no relationship between the diagnosis of anxiety disorders and the sex of the subjects ($p>0.05$). There was also no relationship between the sex of the subjects and the level of anxiety they experienced before quarantine ($p>0.05$). Statistical analysis, however, confirmed the relationship between sex and anxiety levels during and after quarantine ($p<0.05$) - women experienced anxiety slightly more strongly.

The analysis revealed a statistically significant negative correlation between the age of the subjects and the level of anxiety they experienced before, during and after quarantine. Younger subjects experienced higher levels of quarantine anxiety than older subjects ($p=0.001$).

There was a positive correlation between the need for contact with a psychologist and the level of experienced anxiety before, during, and after quarantine ($p<0.0001$). Subjects showed a stronger correlation between the need to see a psychologist and experienced anxiety

levels during and after quarantine than before quarantine - higher levels of experienced anxiety increased the need to seek help from a specialist.

There is also a positive correlation between taking sedative medication and feelings of experienced anxiety before, during and after the quarantine period ($p < 0.001$). This relationship is strongest for the period during and immediately after quarantine.

Discussion

The COVID-19 pandemic is associated with threats to health and life worldwide due not only to the disease itself, but also to its complications [12]. The pandemic brings with it major changes in daily functioning, much of which may be perceived as negative. These factors may contribute to an increased psychological distress, including symptoms of depression and anxiety in the general population of the pandemic country. The analysis of our study showed that the level of experienced anxiety during the quarantine by the subjects was found to be statistically significantly higher compared to its level before and after the quarantine period ($p = 0.002$), noting that it was higher after the quarantine than before. Numerous studies show that the experience of isolation is conducive to experiencing severe stress, which adversely affects mental health in the form of a higher risk of depressive disorders, post-traumatic stress disorder (PTSD), sleep disorders, or anxiety syndromes. This is shown, among others, by a meta-analysis of 3166 publications on the impact of quarantine on mental health in the course of SARS, Ebola, H1N1 influenza and MERS epidemics by researchers from the Department of Psychological Medicine at King's College London [13]. The meta-analysis showed that most quarantined individuals presented psychological symptoms of stress in the form of emotional exhaustion, depressive disorders, irritability, insomnia, and features of post-traumatic stress disorder (PTSD). In the case of the SARS epidemics, respondents experienced: fear (20%), anxiety (18%), guilt (10%), a sense of satisfaction (5%), and a sense of relief (4%). The relationship between pandemic-induced changes in daily life and the occurrence of depressive and anxiety symptoms is also supported by national research, and was described, among others, by Dragan in the Mental Health during Covid-19 Pandemic Report [14].

Jeong et al. compared the near and distant psychological effects of quarantine due to the SARS epidemic: 7% of the subjects presented symptoms of anxiety syndrome (126 out of 1656 subjects), 17% ($n = 275$) expressed anger, after 4-6 months from the end of quarantine, the frequency of these symptoms decreased to 3 and 6% respectively [15]. The problem of anxiety has been thoroughly described by Brooks et al. who listed a wide range of predictors of anxiety, i.e., concern for one's own health, fear of infecting others, including family members, children, and the elderly who are particularly vulnerable [13].

Analysis of our study revealed a statistically significant negative correlation between the age of the subjects and the level of anxiety they experienced before, during, and after quarantine. Younger subjects experienced higher levels of quarantine anxiety than older subjects ($p = 0.001$).

A possible reason for the above phenomenon could be that people with more life experience are able to rationally approach anxiety-provoking situations than those who are just gaining experience. Also, Chinese researchers who analyzed the problem of depression and anxiety among quarantined individuals, social workers, medical personnel and the general population in the early stages of the COVID-19 epidemic showed that the younger age group (18 to 30

years) showed a higher risk of anxiety and depression ($p < 0.0001$) [16]. The results of the study would suggest that young people were particularly vulnerable and less able to cope with the consequences of this epidemic. In the early stages of the COVID-19 epidemic, there were rapid changes in daily routines: students were forced to transition to e-learning modes, and other young adults transitioned to remote work or experienced job loss. Such suspension of classes, economic and employment difficulties may put young adults at greater risk for mental health problems [17,18]. The relationship between age (risk group - young people) and negative emotions and fears about the future related to quarantine was also shown by Dagnino et al. who studied the psychological effects of social isolation due to quarantine in Chile. The same authors also identified women as a group particularly vulnerable to the emotional effects of being in isolation [19]. Our study also showed an association between the sex of the subjects and the level of anxiety during and after quarantine ($p < 0.05$) - women felt anxiety slightly more strongly.

Prolonged exposure to stress/anxiety may cause the so-called somatic symptoms. These are complaints (often of a painful nature) occurring without a clear physiological justification [20]. Their intensity and frequency of occurrence depends on the level, and also the period of being subjected to stressful situations. As many as 29.0% of the surveyed persons believed that somatic complaints occurred or intensified in them during the stay in quarantine.

Finally, it is worth noting that as many as 38.4% declared the need for help from a psychotherapist/psychologist, which is an important signal in terms of organizing support for people in quarantine. The present study indicated a high percentage of people declaring anxiety disorders and a high level of perceived anxiety, which should certainly be verified by visiting a specialist and making a diagnosis. This is important because the review of studies shows that the psychological and social effects of feeling threatened from the time of the epidemic, extend over time affecting mental well-being and physical health in the years following the elimination of the emergency [21].

Summary and conclusions

Being in forced isolation has an impact on the severity of anxiety and the maintenance of high levels of anxiety even after quarantine has ended. The results show the importance of monitoring mental health during (and in relation to) a pandemic.

These results make us wonder: is there a remedy for the anxiety experienced before, during, and after quarantine? Unfortunately, there is no single way to completely eliminate these feelings/symptoms. However, it is possible to implement into the daily routine a few simple habits that will help in coping with the growing anxiety [22,23]:

1. Planning the coming day/week, creating a 'checklist'. It is important to remember to create a plan realistically, adapted to our capabilities. Otherwise, it will only become a source of disappointment, which certainly will not be good for maintaining mental balance.
2. Using technology to contact family/friends. The modern world allows to contact a person from a place ten of kilometers away in just a few seconds. A conversation, even a short one, has a positive effect on eliminating feelings of emptiness and loneliness.
3. Doing physical exercise. Physical activity weakens the body's stress response and improves mood. Regular exercise helps counteract chronic stress, fatigue, and depression.

4. Contact with nature. Although during the quarantine period we are not able to go for a walk in the forest, the presence of even a few plants in the room has a therapeutic, calming effect (hortitherapy - treatment with the help of plants, is a branch of socio-horticulture known and underestimated for generations.
5. Limit the use of social media. Information from everywhere about new deaths and illnesses only increases the tension.
6. Acceptance of the state in which we find ourselves. The realization that few factors are able to influence our current state is difficult, but the positive effect is felt quite quickly.

References

1. AJMC Staff (The American Journal of Managed Care). A Timeline of COVID-19 Developments in 2020; January 1, 2021. <https://www.ajmc.com/view/a-timeline-of-covid19-developments-in-2020> Accessed April 15, 2020.
2. CSHS (Centre for Studies on Human Stress). Two broad categories of stressors. <https://humanstress.ca/stress/what-is-stress/stressors/> Accessed April 18, 2020.
3. APA (American Psychological Association) Dictionary of Psychology. Nightmare. <https://dictionary.apa.org/nightmare> Accessed April 18, 2020.
4. Gelenberg AJ. Psychiatric and Somatic Markers of Anxiety: Identification and Pharmacologic Treatment. *The Primary Care Companion to The Journal of Clinical Psychiatry* 2000;2(2):49-54. doi: 10.4088/pcc.v02n0204
5. CDC (Centers for Disease Control and Prevention). Coping with Stress. <https://www.cdc.gov/coronavirus/2019-ncov/daily-life-coping/managing-stress-anxiety.html> Accessed April 15, 2020.
6. Novotney A. The risks of social isolation. *Monitor of Psychology* 2019;50(5):32. <https://www.apa.org/monitor/2019/05/ce-corner-isolation> Accessed April 18, 2020.
7. Kostka MS. Pierwotne zadanie ekonomii: rozumieć człowieka. *Ekonomia I Środowisko* 2015;1(52):1-25.
8. Serwis Rzeczypospolitej Polskiej. Wszystko co powinieneś wiedzieć o kwarantannie. <https://www.gov.pl/web/koronawirus/wszystko-co-powinienes-wiedziec-o-kwarantannie> Accessed April 18, 2020.
9. Sas A. Coronavirus (COVID-19) in Poland. <https://www.statista.com/statistics/1103772/poland-number-of-people-quarantined-because-of-coronavirus/> Accessed April 18, 2020.
10. Bomba J. Fobia społeczna. *Farmakoterapia w Psychiatrii i Neurologii* 2000;4:321-331.
11. Crawford P. Editorial Perspective: Cabin fever – the impact of lockdown on children and young people. *Child and Adolescent Mental Health* 2021;26(1):167-168. <https://doi.org/10.1111/camh.12458>
12. Anderson RM, Heesterbeek H, Klinkenberg D, et al. How will country-based mitigation measures influence the course of the COVID-19 epidemic? *The Lancet* 2020;395(10228):931-934. doi: [https://doi.org/10.1016/S0140-6736\(20\)30567-5](https://doi.org/10.1016/S0140-6736(20)30567-5)
13. Brooks SK, Webster RK, Smith L, et.al. The psychological impact of quarantine and how to reduce it: rapid review of the evidence. *Lancet* 2020;395(10227):912-920.
14. Dragan M. Raport: Zdrowie psychiczne w czasie pandemii Covid-19; 2020. <http://ptbst.org.pl/badania/> Accessed April 15, 2020.

15. Jeong H, Yim HW, Song Y-J, et al. Mental health status of people isolated due to Middle East respiratory syndrome. *Epidemiology and Health* 2016;38:e2016048. doi: 10.4178/epih.e2016048
16. Li X, Yu H, Yang W, et al. Depression and Anxiety Among Quarantined People, Community Workers, Medical Staff, and General Population in the Early Stage of COVID-19 Epidemic. *Frontiers in Psychology* 2021;12:638985. doi: <https://doi.org/10.3389/fpsyg.2021.638985>
17. Liu CH, Zhang E, Wong GT, et al. Factors associated with depression, anxiety, and PTSD symptomatology during the COVID-19 pandemic: clinical implications for U.S. young adult mental health. *Psychiatry Research* 2020;290:113172. doi: 10.1016/j.psychres.2020.113172
18. Rachel CM, Harika R, Meera Menon, et al. Universities' Response to Supporting Mental Health of College Students During the COVID-19 Pandemic. 2020. <https://www.psychiatrytimes.com/view/universities-response-supporting-mental-health-college-students-during-covid-19-pandemic> Accessed April 18, 2020.
19. Dagnino P, Anguita V, Escobar K, et al. Psychological Effects of Social Isolation Due to Quarantine in Chile: An Exploratory Study. *Frontiers in Psychiatry* 2020;11:591142. doi: 10.3389/fpsyg.2020.591142
20. Nitsch K, Jabłoński M, Samochowicz J, et al. Zaburzenia pod postacią somatyczną: problematyczne zjawisko — problematyczna diagnoza. *Psychiatria* 2015;12,2:77-84.
21. Sosnowska MM. Przegląd badań nad wpływem epidemii na zdrowie psychiczne pracowników medycznych i osób poddanych kwarantannie oraz izolacji. *Psychiatria* 2020;17(4):229-236. doi: 10.5603/PSYCH.2020.0038
22. Gerber M, Puhse U. Do exercise and fitness protect against stress-induced health complaints? A review of the literature. *Scandinavian Journal of Public Health* 2009;37(8):801-819. doi: 10.1177/1403494809350522
23. Zawiślak G. Hortiterapia jako narzędzie wpływające na poprawę zdrowia psychicznego i fizycznego człowieka. *Annales Universitatis Mariae Curie-Skłodowska. Sectio EEE, Horticultura* 2015; XXV(1):21-31.