# Post-Pandemic Stress Disorder (COVID-19)

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The COVID-19 pandemic has undoubtedly affected the mental health of the population to a great extent and even left a permanent mark on it. Because the fear of something unknown, which is certainly the pandemic of a new coronavirus announced by the World Health Organization (WHO) on 11 March 2020, contributes to the manifestation of anxiety symptoms in society, it thus initially worsens the state of mental health, even of healthy people.

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## 1. Post-Traumatic Stress Disorder versus Post-Pandemic Stress Disorder

Tedros Adhanom, the Director of the WHO, in one of the conferences defined that the whole world has to prepare for the so-called “mass trauma” caused by the current epidemiological situation. For this reason, the development of support for the mental health and psychosocial well-being of all people reveals a very important role in the development of recovery plans [1]. However, it is worth noting that these negative effects may be felt by individuals even after the end of the pandemic, as they may lead them to develop depression or the so-called post-pandemic stress disorder (PPSD) [2].

The term post-pandemic stress disorder was introduced by psychotherapist Owen O’Kane in 2021. Although it is not an independent disease entity as of today, it is a serious problem that many people face, often without even being aware of it. The term has not been introduced to the international classification of mental and behavioral disorders ICD-10, however, this may shortly occur. According to its creator, the term post-traumatic stress disorder refers to the so-called Post-traumatic stress disorder (PTSD) [2][3]. Post-traumatic stress disorder is a mental disorder that occurs as a result of exposure to a traumatic, extreme, and stressful event. The event exceeds the individual’s ability to adapt and cope with stress. In the case of PTSD, this is most often a single large harrowing event, such as seeing people dying in a war, experiencing rape or sexual abuse, being diagnosed with a fatal disease, or other types of major disasters [4]. In contrast, in the case of PPSD, the resulting trauma is due to experiencing and being affected by several smaller distressing experiences. These may include a fear of infection, exposure to quarantine and isolation, fear of job loss, lockdown, loneliness, and loss of social life [2][3].

In many countries around the world, there are currently two classifications of post-traumatic stress disorder on which the diagnosis of PPSD is based. These are DSM-5 (2013) and ICD-10. Based on the Diagnostic and Statistical Manual of Mental Disorders DSM-5 of the American Psychiatric Association (APA), the DSM-5

classification was developed with several criteria [4][5]. Criterion A, for example, is related to a stressor and requires “exposure to actual or threatened death, serious injury, or sexual violence” through direct exposure, being a witness, or reporting that one’s relative/close friend has been exposed to trauma. A distinction is also made between so-called indirect exposure occurring, for example, in medical professionals during their professional work. Criterion B is the presence of at least one of the listed symptoms of “psychological intrusion” in the affected person. Examples are recurrent and unwanted memories, flashbacks, and high emotional stress. Criterion C is the avoidance of stimuli related to the traumatic event by avoiding internal (personal feelings, sensations) as well as external (places, people, objects) reminders [6][7]. Criterion D is primarily negative changes in a person’s mood and cognition that are correlative with the traumatic event. Criterion E includes changes in reactivity and arousal. Criterion F is the duration of symptoms. For a diagnosis of PTSD, symptoms must last longer than 1 month. Criterion G is related to the functional significance of PTSD, such as leading to chronic suffering and/or disability in many aspects of life. Criterion H is the so-called exclusion of the effects of other substances, especially psychoactive substances, and the absence of the presence of other medical entities that may erroneously indicate the development of PTSD [8].

The diagnostic criteria according to the ICD-10 classification are similar to the DSM-five classification described, although some differences between them are noticeable. The ICD classification tends to show a relatively less complex and simpler position for psychiatric diagnoses compared to the DSM classification discussed earlier [9]. Nevertheless, the core of the ICD classification remains the reaction to a highly stressful event and the recurrence of the stressor in persistent so-called “flashbacks”. All guidelines are based on symptoms of anxiety and fear, which include recurrent re-experiencing of a specific traumatic event. The avoidance of reminders and the prospect of danger are also important. Indeed, a key component of PTSD is re-experiencing memories of the harrowing event in the present [10]. For example, the ICD-10 classification lists “severe stress reaction and adjustment disorder” in category F43. This is the only diagnostic category that is formulated as having to do with psychotraumatic impact. In addition, the ICD-10 classification also distinguishes between “acute stress reaction” and “post-traumatic stress disorder” [11].

Although COVID-19 does not tentatively fit into models of post-traumatic stress disorder, both according to the DSM-5 and ICD-10 classifications and their respective diagnostic criteria, published studies increasingly describe traumatic stress symptoms arising from an ongoing stressor, such as a coronavirus pandemic. Current models focus very much on the direct exposure of trauma to certain types of life-threatening events. However, traumatic stress reactions to future indirect exposure to trauma and non-criterion A events exist, which suggests that COVID-19 is also a traumatic stressor that may lead to PTSD symptomology [11][12].

The symptoms of PPSD and PTSD are very similar but may manifest differently in each person. Nevertheless, the most typical symptoms include: feeling of fear and anxiety, recurrent and intrusive thoughts, presence of negative emotions, social withdrawal, sleep disorders, change in eating behavior, feeling of powerlessness, and dissociative disorders [3][11]. Symptoms identical to a diagnosis of PTSD also include re-experiencing the traumatic event and avoiding any experiences that trigger memories of the event. People experiencing PTSD often avoid even the smallest stimuli referring to the traumatic event. These symptoms often contribute to discomfort in public

encounters and a growing distrust of interpersonal relationships and generalized fear. Some individuals may also experience identity diffusion, consisting of a distorted self-image [13]. All of the symptoms discussed can last from at least a few weeks to even a few years in a small percentage of cases and can have a serious impact on an individual's life [11].

Post-pandemic stress disorder is currently being promoted by the author of the term, psychotherapist O'Kane, who is working towards the recognition of a new mental health condition, PPSD. He strongly emphasizes that in the case of PPSD, it is more important to find the root cause of the symptoms than to try to cope with the symptoms themselves. He says that if the underlying fear is trauma caused by a stressor from the COVID-19 pandemic, then it is the trauma itself that needs to be tackled first, otherwise, the symptoms will recur. Because the trauma is not resolved and in some way closed by people experiencing PPSD, then their organism will constantly be in the so-called danger mode, as a result of which the severe and intrusive symptoms will be constantly felt [2][3].

To summarize the theme of PTSD and PPSD, the global pandemic crisis has triggered a range of different emotional and psychological responses, both collective and individual, which researchers can observe daily among people living alongside. However, the pandemic may prove to be a particularly serious stressor for patients who have survived COVID-19 and healthcare workers. Moreover, the traumatic events related to the pandemic that the public has continuously experienced over the past years have had a lasting impact on their psyche, and therefore the need to care for their mental health should be considered to prevent PPSD [13][14].

## 2. The Psychosocial Context of the COVID-19 Pandemic

Relating the above data to the general population, several studies on the impact of the COVID-19 epidemiological situation on mental health can be found in the global literature. One national study of the UK population analyzed the prevalence and correlation of traumatic stress symptoms associated with the COVID-19 pandemic among older people [15]. An analysis of the data collected by Horowitz and Wilner [16] was conducted on a sample of 3012 people aged 60 years and over. Study participants were asked to participate in an online survey in which post-traumatic stress disorder symptoms were measured using the Impact of Event Scale (IES). This scale is one of the best-known tools for measuring PTSD. In addition, it has also been adapted for use in assessing the impact of COVID-19—the so-called Impact of Event Scale with modifications for COVID-19 (IES-COVID19) [17]. It consists of 15 statements that characterize reactions to traumatic events, and 7 of them relate to measuring intrusions, i.e., intrusive experiences and images, while the remaining 8 relate to the study of avoidance, i.e., avoidance of memories and feelings recalling the traumatic event. All are scored on a 4-point scale, where 0 means "not at all" and 5 means "often". The point score is directly proportional to the symptoms of the trauma. The higher it is, the greater its symptoms [16][17]. The following results were obtained in the study: 36.5% of the respondents reported experiencing clinically significant symptoms of traumatic stress related to trauma, such as COVID-19, of which 27.4% of the cases of those participating in the study may develop PTSD. Moreover, relatively more severe symptoms were reported by women and older adults [15]. The results of the conducted study show the great need for psychological support for a significant number of older people with post-traumatic stress disorder.

A study of mental health related to the impact of the COVID-19 pandemic was also conducted in Greece by V. A. Nikopoulou, V. Holeva, E. Parlapani et al. The study involved 538 respondents who were asked to complete a questionnaire in which post-traumatic stress symptoms were measured using several different psychometric scales [18]. One of these was the Fear of COVID-19 Scale (FCV-19S), developed in 2020 and recognized in many countries around the world as a good psychometric tool for assessing fear of COVID-19 during a pandemic. It is a seven-item scale containing items related to feelings about COVID-19 disease. Responses to the mentioned items can be given using a five-item Likert-type scale expressing the degree of agreement, where 1 means “strongly disagree” and 5 means “strongly agree”. The higher the score on the FCV-19S, the higher the level of fear of COVID-19 [19][20]. The results obtained by the Greek authors were as follows: 32.7% of women and 7.8% of men participating in the study were classified as having elevated fear with post-traumatic stress symptomatology. The apparent discrepancy between the results of both sexes does not mean that women showed significantly higher levels of fear than men. This is because the sample size in the study differed significantly by gender—women constituted 4/5 of the study sample and therefore the two groups cannot be compared [18]. Furthermore, although the majority of respondents experienced normal levels of fear, this does not mean that the mental health risks caused by COVID-19 anxiety do not exist. On the contrary, efforts to protect the mental health of the population should be intensified.

Another study dedicated to analyzing the symptoms and correlates of post-traumatic stress disorder during the COVID-19 pandemic, conducted on the Chinese population, showed the ongoing global mental health crisis in the population. The study was conducted using an online questionnaire. After analyzing all the answers given, 338 of them were included in the study. Post-traumatic stress disorder symptoms among the respondents were assessed using the PTSD checklist for the DSM-5 classification described in the APA Diagnostic and Statistical Manual—the so-called PCL-5 checklist [21]. The post-traumatic stress disorder checklist is a commonly used measure of PTSD symptoms according to the DSM-5 and consists of 20 items assessing the severity of PTSD according to the criteria in the DSM-5 classification, with respondents rating each of the listed problems on a five-point Likert scale from 0, which means “not at all”, to 4, which means “intensely”. The purpose of the list is to indicate the extent to which each symptom has bothered the survey participants over the past month. The total symptom severity score was obtained by adding up the scores for each of the 20 items—this ranges from 0 to 80, with the PCL-5 cut-off score according to preliminary studies being between 31 and 33, indicating that PTSD is likely to develop [22][23][24]. In the cited study, the analysis revealed that the mean PCL-5 score among respondents was 12.9. Additionally, 3.5% of the total sample reported a sum of PTSD symptoms above the PCL-5 cut-off point, which may speak to the development of PTSD. In contrast, 25.44% of the total sample met two or more criteria for a PTSD diagnosis, albeit with total PCL-5 scores below the cut-off point. Examining the PTSD symptom network was also an important part of the study. In the symptom network associated with the COVID-19 pandemic, self-destructive and reckless behaviors appeared to be the most central symptom [21].

The next scientific paper researcher cited examined the eating behavior of young adults in the German population for significant changes in the COVID-19 pandemic. The study involved 1980 Bavarian university students who were asked to complete a questionnaire. The authors obtained the following results: 610 people declared that they were eating more, while 328 people answered that they were eating less compared to before the pandemic started, and

the remaining people did not change the amount of food they consumed. Furthermore, the presence of a correlation between increased alcohol consumption (42.3%), smoking (42.0%), psychological stress (35.4%), and eating more food during the COVID-19 pandemic was noted. These changes are undoubtedly linked to the introduction of restrictions in Bavaria, as well as the effect of increased anxiety and psychological stress affecting a great number of people during the pandemic. Indeed, in addition to the threat of potential infection, a pandemic also causes a high degree of uncertainty, which in turn increases feelings of agitation and hyper-vigilance, which can affect eating habits. This thesis is supported by the results of the study, who reported in one of their conclusions that a higher risk of consuming food in increased amounts is found in people who experience psychological stressors [25]. The conclusions of the cited study are very worrying because improper eating habits affect the health of people to a significant extent. Especially the problem of being overweight and obesity increases the risk of cardiovascular diseases, which have been the leading cause of death in the world for more than 20 years. Obesity, on the other hand, greatly increases the risk of developing severe COVID-19 pneumonia [26][27].

Another study worth mentioning concerns the mental-health status of COVID-19 survivors. The study was conducted in Pakistan and published on 6 January 2022 and is therefore highly relevant. Additionally, COVID-19 survivors are a particular group of people at risk of developing symptoms of PPSD, so it is particularly worth looking at this publication. The study group consisted of 70 people aged 18–60 years. To collect data the authors used tools to measure mental state, such as Impact Event Scale-Revised (IES-R), Patient Health Questionnaire-9 (PHQ-9), and Coronavirus Anxiety Scale (CAS) [28]. The former, the IES-R scale, is used to measure PTSD, consists of 22 items and takes into account its three different dimensions: intrusion in the form of excessive thoughts, avoidance, and overstimulation. Each of these statements is scored using a 5-point Likert-type scale, where 0 means “not at all” and 4 means “very much”. The cut-off score is 33 and indicates a high risk of PTSD symptomatology [29]. In turn, the PHQ-9 questionnaire is used for the initial diagnosis of depression and to measure the severity of its symptoms. As a measure of severity, the PHQ-9 score can range from 0 to 27, as each of the 9 criteria can be scored from 0 meaning “not at all” to 3 meaning “almost every day” [30][31]. In contrast, the CAS scale is a tool for measuring mental health and assessing dysfunctional anxiety associated with COVID-19. It takes the form of a 5-item test in which each item indicates a different physiological response to fear caused by the COVID-19 pandemic over the past 2 weeks. In response to each item listed, an appropriate rating is selected using a five-point scale, where 0 means “not at all” and 4 means almost every day” [32][33]. The authors of the above-mentioned study measured the level of depression among the respondents using the PHQ-9. The results obtained speak for a mass occurrence of depressive disorders among the recovered. Among all 70 people participating in the study, only 8 of them (11.4% of the total) did not show symptoms indicative of depression. Of the remaining 62 people, 27 of them (38.5% of the total) had mild depression and 18 (25.7% of the total) had moderate or severe depression. Using the IES-R scale, the authors then examined the prevalence of PTSD among participants who, as mentioned, had experienced COVID-19. The results show that as many as 47 respondents (67.1% of the total) manifested symptoms of post-traumatic stress disorder, while the remaining 23 respondents (32.9%) showed no effect of COVID-19 on their mental health. In turn, using the CAS scale, the authors measured the level of anxiety and fear associated with the COVID-19 pandemic. The results are as follows: 52 people (74.3% of the total) did not declare anxiety, while 14 people (29.7% of the total) showed anxiety related to COVID-19. Moreover, it was shown

that patients with symptoms of COVID-19 have significantly higher levels of depression, stress, as well as anxiety, compared to asymptomatic patients [28]. It is found that the trauma faced by COVID-19 survivors and the need for effective psychological support.

One study conducted this time in a Mexican sample also demonstrated psychological distress and the presence of post-traumatic stress symptoms in response to a health risk associated with COVID-19. The total study sample consisted of 3932 individuals. The previously mentioned IES-R scale was used to determine the presence of psychological distress in response to the traumatic event. The overall results obtained by the authors related to the frequency of psychological stress showed that 1160 people (27.7% of the total) had clinically significant symptoms of post-traumatic stress disorder. Regarding the presence of moderate or severe mental stress, 943 people (22% of the total) manifested intrusive thoughts, 933 people (22.3% of the total) demonstrated avoidance, while 515 people (12.2% of the total) exhibited excessive agitation. The results obtained are very worrying, as almost 30% of the respondents had symptoms of PTSD, which, for about a relatively large sample of the surveyed population, is a considerable percentage. In such a case, it seems justified to introduce all measures aimed at reducing the occurrence of PTSD symptoms. These may include activities, such as psychotherapy, including learning to manage emotions or psychoeducation [34].

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