Chapter

Is the Pandemic a Risk Factor for Eating Disorders?

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Abstract

COVID-19 has already established direct or indirect effect on the lives of everyone. One of its many consequences is exacerbation of eating disorders' (ED) triggers. Numerous risk factors for ED are enhanced during pandemic – anxiety, fear, depressed mood. Distance learning or working may result in loss of daily-life routine and feeling of being overwhelmed with duties. Due to forced isolation people are more exposed to social media pressure. Additionally, awareness of limitations of physical activity can develop fear of gaining the weight. These are typical symptoms of Anorexia Nervosa, a disease with the highest mortality rate among psychiatric disorders. Frustration, tedium and lack of external distractors can lead to inappropriate food-related coping style. Especially during the first wave of the pandemic, society was cautious about fresh food supplies and therefore many decided to stock up with processed, unhealthy food. Aggregation of stressors (e.g., worries about health, financial problems, loneliness) may promote binge eating.

Keywords: COVID-19, Pandemic, Eating Disorders, Anxiety, Coping

1. Introduction

Till 15. April 2021, the World Health Organization (WHO) reported 137,866,311 confirmed cases with 2,965,707 deaths due to Coronavirus disease 2019 (COVID-19) [1]. A pandemic extends to almost all countries across the globe [2].

Shockingly rapid spread and mortality of COVID-19 naturally generated mental health disturbances, increasing prevalence of anxiety and depression in population. As it was displayed by a Chinese survey conducted during the first peak of the pandemic, prevalence of anxiety and depression increased from 4% to 20% [3]. An American survey performed by National Centre for Health Statistics notified that up to 42,6% of respondents reported clinical signs of depression and anxiety [4]. Interestingly, occurrence of these symptoms was the least frequent in the oldest group (who are at the highest risk for infection, severe illness and death caused by Coronavirus [5]), and the most frequent in the young adults, as well as more common in women than in men. Women are less likely to develop severe illness or die due to COVID-19 than men [6], but actually this group- young females- is affected the most by eating disorders (ED) [7, 8]. Increasement of unhealthy behaviors concerning eating in the whole society, e.g., searching for comfort food (to regulate emotions via eating), frequent snacking and restrictions on physical activities lead to weight changes. American Psychological Association's poll (*Stress in America™*) assessed that 42% of general adult population in USA has unintentionally gained weight since the pandemic began [9].

As it was reported, financial troubles due to job loss and quarantaine, as well as time spent on information about pandemic, were related to appearence of anxiety and depression [3]. Economic problems caused by the pandemic were pointed as the most important trigger.

Forced isolation and its inconveniences diminishes quality of life [10]. As patients with ED have already decreased quality of life [11, 12], these findings evoked questions how current pandemic will affect them.

2. Definition and criteria for AN, BN, BED

Among eating disorders, American Psychiatric Association determined pica, anorexia nervosa (AN), bulimia nervosa (BN), binge eating disorder (BED), other specified feeding and eating disorder (OSFED), rumination disorder, avoidant/restrictive food intake disorder (ARFID), unspecified feeding or eating disorder (UFED) [13].

However, current research on the COVID-19 pandemic covers only issues generally defined as eating disorders, sometimes specified to AN and BED (mainly, as these disorders are presumed to be more affected by the pandemic), with mentioned BN and OSFED.

According to the DSM-5 [13], the official diagnostic criteria for AN are introduced in the **Table 1**.

A. Restriction of energy intake relative to requirements, leading to a significantly low body weight in the context of age, sex, developmental trajectory, and physical health. Significantly low weight is defined as a weight that is less than minimally normal or, for children and adolescents, less than that minimally expected.
B. Intense fear of gaining weight or of becoming fat, or persistent behavior that interferes with weight gain, even though at a significantly low weight.
C. Disturbance in the way in which one's body weight or shape is experienced, undue influence of body weight or shape on self-evaluation, or persistent lack of recognition of the seriousness of the current low body weight.

Table 1.
DSM-5 diagnostic criteria for anorexia nervosa.

A. Recurrent episodes of binge eating -an episode of binge eating is characterized by both of the following:
1. Eating, in a discrete period of time (e.g., within any 2-hour period), an amount of food that is definitely larger than what most individuals would eat in a similar period of time under similar circumstances.
2. A sense of lack of control over eating during the episode (e.g., a feeling that one cannot stop eating or control what or how much one is eating).
B. Recurrent inappropriate compensatory behaviors in order to prevent weight gain, such as self-induced vomiting; misuse of laxatives, diuretics, or other medications; fasting; or excessive exercise.
C. The binge eating and inappropriate compensatory behaviors both occur, on average, at least once a week for 3 months.
D. Self-evaluation is unduly influenced by body shape and weight.
E. The disturbance does not occur exclusively during episodes of anorexia nervosa.

Table 2.
DSM-5 diagnostic criteria for bulimia nervosa.

A. Recurrent episodes of binge eating. An episode of binge eating is characterized by both of the following:

   1. Eating, in a discrete period of time (e.g.,within any 2-hour period), an amount of food that is definitely larger than what most people would eat in a similar period of time under similar circumstances.

   2. A sense of lack of control over eating during the episode (e.g., a feeling that one cannot stop eating or control what one is eating).

B. The binge-eating episodes are associated with three (or more) of the following:

   1. Eating much more rapidly than normal.

   2. Eating until feeling uncomfortably full.

   3. Eating large amounts of food when not feeling physically hungry.

   4. Eating alone because of feeling embarrassed by how much one is eating.

   5. Feeling disgusted with oneself, depressed, or very guilty afterward.

C. Marked distress regarding binge eating is present.

D. The binge eating occurs,on average,at least once a week for 3 months.

E. The binge eating is not associated with the recurrent use of inappropriate compensatory behavior as in bulimia nervosa and does not occur exclusively during the course of bulimia nervosa or anorexia nervosa.

Table 3.
DSM-5 diagnostic criteria for binge eating disorder.

This category applies to presentations in which symptoms characteristic of a feeding and eating disorder that cause clinically significant distress or impairment in social, occupational, or other important areas of functioning predominate but do not meet the full criteria for any of the disorders in the feeding and eating disorders diagnostic class. The other specified feeding or eating disorder category is used in situations in which the clinician chooses to communicate the specific reason that the presentation does not meet the criteria for any specific feeding and eating disorder. This is done by recording "other specified feeding or eating disorder" followed by the specific reason (e.g.,"bulimia nervosa of low frequency").

Table 4.
DSM-5 diagnostic criteria for other specified feeding and eating disorder.

One can distinguish between the types of AN, if it is restricting or binge-eating/purging subtype; as well as level of severity, determined on the basis of Body Mass Index.

The official diagnostic criteria for BN [13] are given in the **Table 2**.

Level of severity of BN is characterized due to the number of episodes of inappropriate compensatory behaviors per week.

The official diagnostic criteria for BED [13] are presented in the **Table 3**.

Level of severity of BED is characterized due to the number of binge-eating episodes per week.

The official diagnostic criteria for OSFED [13] are showed in the **Table 4**.

Other categories of OSFED could be atypical AN, binge eating disorder of low frequency, purging disorder or night eating syndrome.

3. Impact of the COVID-19 pandemic on ED

There were predictions on the pandemic's impact on ED patients- pointing lack of routine, shortage in groceries and greater exposure to social media as potential significant triggers causing deterioration [14, 15].

A report considering this issue (conducted just after first 2 weeks of lockdown) displayed not only enhancement of already existing symptoms of ED, but also adjustment of some new signs (e.g., anxiety) [16].

Study performed on 207 participants with ED revealed that overwhelming majority (83,1%) of them reported deterioration of symptoms during COVID-19 pandemic [17]. Although participants differed in pointing which trigger factor was the most significant, the most often appeared: changes in daily routine, coping with emotions and changes on physical activity. Interestingly, in another study, the same factors were chosen by patients diagnosed with binge eating disorder (BED) as helpful in maintaining symptoms [18]. According to differentiation upon diagnosis exposure to triggering messages (via social media) was more important for patients with AN or other specified feeding or eating disorders (OSFED) than for those with BED [19]. However, it was also revealed that anorectics were ambivalent to using social media in the pandemic, but some of them managed to find *golden mean* [16].

Changed access to food was slightly more important for persons with BED than for people with AN or bulimia nervosa (BN) [19]. Respondents shared their concerns about losing control over food. Especially at the beginning of the pandemic, society was uncertain, if fresh food will be regularly supplied. Many developed fear against shortages in shops. In order to follow governmental recommendations and out of fear of being infected, people tried to limit their visits in groceries. Trying to find coping strategy for that, people stored greater amount of food (usually unhealthy, highly processed snacks and doses) at home. When lockdown promoted remote work and school, there was unlimited access to the fridge due to loss of the daily routine and boredom. More flexible work schedule led to lack of distraction to obsessive thoughts according eating or body. This factor may lead to binge eating.

Lockdown forced everyone to stay within their households. Respondents declared that because of isolation from those, who could help, they have received less emotional support. On the other hand, some people felt being forced to follow the rules of other family members or fellow residents (e.g., pressure to eat meals prepared by others). It resulted also in lack of privacy, what was especially troublesome when contacting the therapist via phone or Internet. As population with ED often find social–emotional communication problematic, they may consider circumstances of lockdown as easier to cope with than healthy ones [16].

Some patients developed new adaptive strategies of coping by founding online support groups, or websites; others used harmful strategies (e.g., excessive alcohol consumption, medication's usage, self-harm). A strong therapeutic relationship was a protecting factor against such a powerful stressor as the pandemic.

People with ED described how the pandemic influenced changes on their physical activity. As a consequence of national restrictions on gatherings, they experienced loss of outdoor or organized activities. Diminishment of time spent on exacerbated sport activities can serves as a protecting factor against ED. Concurrently, there occurred new possibilities to spend more time on exercising at home. This was a maladaptive strategy to deal with enhanced anxiety triggered by the pandemic [4].

Patients with ED described their consciousness of absorbing health system, which could be better spent on pandemic issues. As a probably consequence, less people were searching for mental care, despite being affected by more stressors [19].

Surprisingly, some responders (6.8%) noticed improvement. Due to therapeutic limitations, they took an advantage on obstacles and managed to practice self-caring and helping themselves to fight symptoms [18]. Lack of privacy during lockdown turned into a benefit that prevents binge eating episodes. On the other hand, those allienated reported more time spent on worries concerning eating and weight,

what generated deterioration. In half of the responders, COVID-19 itself caused an increase in motivation for treatment [18]. Because COVID-19 is more dangerous for those with comorbidities, they have tried to get their eating disorders´ symptoms under control.

4. Impact of ED on COVID-19

Besides psychological and social consequences of ED, these patients usually carry also a burden of physical aftermath of their mental disturbances (i.e., malnutrition, obesity, changes of weight, dysregulated endocrine, reproductive and skeletal systems, micronutrients deficiencies, hemodynamic changes, cardiomyopathy, arrhythmia, hypotension, and bradycardia [20–23]). That makes them hypothetically more vulnerable to after-effects of COVID-19 [24].

In addition to comorbidities related to physical health, people with ED also experience the effects of the mental strain caused by COVID-19. Gradually there are studies that describe not only the impact of the pandemic and the threat of infection on the mental health [3, 4], but also reports on the mental consequences of suffering from COVID-19 itself [25, 26]. As it was shown, medical workers infected with COVID-19 significantly more often experienced deppresion, anxiety, intrusion, hypervigilance and avoidance than healthy medical workers [25]. Persons with other mental problems [26] (e.g., ED) are at higher risk of developing PTSD as a consequence of being sick on COVID-19. Meta-analysis of studies according psychiatric symtoms of severe Coronaviral infection described delirium and altered consciousness [27]. However, there is still a lack of thorough research into the course of COVID-19 in patients with ED.

AN influences many body processes, as well immune system. AN patients are supposed to be more resistent to viral infection [28] what can serve as specific protection against Coronavirus. On the other hand, there were AN patients who displayed distinctive reaction to infection, with reduce febrile response [29]. Considering high fever as a core symptom of COVID-19, its proper diagnosis may be delayed or even overlooked in this group of patients.

People with AN may develop specific response to vaccination against Coronavirus, as it was in case of influenza vaccine [28]. First, their reaction to the flu vaccination was comparable to healthy controls', but 2 months later they displayed higher titer of antibody. Till now, no similar study on the vaccine against Coronavirus was conducted on anorectics.

5. Tele-therapy

In given circumstances of government directives to reduce face-to-face contacts and fear of contagion, remote therapeutic interventions are the obvious solution, becoming more and more popular [17, 18]. Some patients considered it even more advantageous, pointing feeling more in control, lower anxiety due to detached connection (especially essential in case of body shame) and easier access, as it does not require any travel [17, 18]. It increased also motivation to healing [18]. These findings are in line with recommendations given already 15 years ago, that tele-therapy could be specially effective for ED patients [30], with satisfying long-term consequences [31].

The first reported attempts at tele-therapy of ED were aimed at providing professional care in distant territories [32]. However, remote therapeutic assistance for patients with ED has not been described as broadly as for other patients, e.g., with PTSD [33, 34]. This may be due to the importance of weighing patients with

ED. Notwithstanding, dramatic reality of pandemic forced mental health professionals to establish this kind of help that was possible in the given situation. Only two weeks after the pandemic was announced by WHO, an international group of specialists conducting cognitive-behavioral therapy for ED began to develop guidance for its remote type [35], covering issues like licensure regulations, technology experiences, but also practical tips to clarify doubts about the effectiveness of the tele-therapy or proposals for therapeutic intervention in the event of shifting the focus of therapy to pandemic issues. In terms of solving the problem of regular patients weighing, several proposals have been suggested: hi-tech scales sending results electronically to the therapist, making photo or video while weighing, performing it with supportive family member, etc.

Although, in conditions of lockdown and confinement it can be difficult to find some privacy from family members for open conversation. As it was confirmed in another study, traditional face-to-face therapy brought significantly greater improvement in BED symptomatology, than regular e-mail contact with therapist in a 6-month follow-up [36]. Interestingly, in a 1,5-year follow-up there was no difference between two types of therapies.

What is more, people with ED, already isolated and lonely because of their disorder, and usually with poor insight into their illness, may be reluctant to seek for professional help. In a situation of more difficult access to therapy, they may not make an effort to proactively organize it [10, 16].

6. Long-term aspects of pandemic on ED

Pandemic can be considered as a collective and individual trauma. Every additional stressor, especially so significant, may led to long-term consequences in mental health. Those caused by COVID-19 will be fully discovered in upcoming years.

Even though SARS epidemic outbreak in 2002-2003 involved smaller amount of patients (8096 confirmed cases with 774 confirmed deaths [37] comparing to 137,866,311 confirmed cases with 2,965,707 deaths due to COVID-19 till 15. April 2021), its psychological impact could be extrapolated on the predictions of long-standing aspects of actual pandemic. In 12-year-follow-up for survivors of SARS, it was revealed, that they have developed more often and earlier than control group anxiety disorders, depression, sleep disorders and suicide attempts [38]. Canadian extensive survey showed that experience of quarantine led to higher prevalence of PTSD even 5 years later [39].

Development of vaccine against COVID-19 has brought some hope in the last few months. There are worldwide national immunization schedules, which aim to build population resilience. In upcoming months it would be possible to observe impact of vaccination, also on people with ED. Among them, anorectics may present specific immune response toward COVID-19 vaccination [28], but this hypothesis requires further studies.

7. Conclusions

So far, there are only few studies concerning impact of the current pandemic on eating disorders. As it was predicted, many patients with ED reported deterioration in eating disorders´ symptoms.

Among factors of major importance, there were mentioned issues like lack of daily routine to organize time in case of intrusive thoughts, fear of gaining weight due to lockdown and restrictions on sport activities, nonadaptive coping style to

regulate emotions with binge eating episodes. Financial troubles caused by loss of job often increased stress. There were findings adding some new aspects that arose because of isolation (e.g., poorer access to institutional care).

Frequently, the same conditions were valuated differently by patients, as helpful or harmful due to varied circumstances and needs (e.g., home office or distance learning may reduce stress normally created by peers, but also creates more time to exercise at home; lockdown in case of living alone may cause loneliness, but assures privacy and independence, while being forced to spent 24 hours per day with few people may lead to conflicts, but provides support). That shows the multifaceted nature of patients' needs and eating disorders, as different factors may conduct healing or worsening.

Surprisingly, there were also described positive aspects of the pandemic on symptomatology of ED. Some respondents reported reduction of symptoms and higher motivation to engage themselves in the therapy, as they felt more in control. Remote work and school relieved persons with ED from the peer pressure and rigid inconvenient work schedule.

The undeniable positive effect of the current pandemic is the acceleration of the development of tele-therapy. Even after the end of lockdown, this form of therapy increases availability of mental health care. As it was shown in few studies, tele-therapy is suitable for eating disorders, with satisfactory long-term effectiveness and positive perception by respondents.

The COVID-19 pandemic lasts longer as it was predicted. A society bombarded with endless news of deaths, threats and limitations wonders how many more waves of the pandemic will come. Constant stress, the fear of contagion and possible death, as well as uncertainty are debilitating for everybody, but especially for those more vulnerable, already affected by mental disorders including eating disorders.

Conflict of interest

The author declares no conflict of interest.

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