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Article

The COVID-19 Pandemic's Impact on Eating Disorders: An Italian Residential Center Perspective

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Abstract: **Background/Objectives:** The COVID-19 pandemic has had a profound impact on mental health worldwide, especially exacerbating Eating Disorders (EDs). This study aims to evaluate changes in the presentation and severity of EDs before and after the pandemic at the Regional Residential Center "Mariconda" in Salerno. **Methods:** This retrospective cohort study analyzed data from 162 patients admitted to the Regional Residential Center "Mariconda" between December 2018 and December 2023. The onset of pandemic restrictions in mid-2020 was the dividing line for the pre-COVID and post-COVID groups. Demographic and clinical data were collected, including age, gender, education level, previous hospital admissions, admission diagnosis, body mass index (BMI), and comorbidity with other psychiatric illnesses. **Results:** Of the 162 subjects, 115 were admitted post-pandemic. The post-pandemic group was significantly younger, had lower education levels, more frequent previous hospitalizations, and a higher frequency of severe comorbidity with other mental illnesses compared to the pre-COVID group. No significant differences were found between the groups regarding gender distribution, initial diagnosis upon admission, average and length of hospital stay. **Conclusion:** The COVID-19 pandemic has exacerbated the presentation and severity of EDs, particularly among younger individuals with lower educational attainment. These findings underscore the urgent need for targeted, integrated treatment approaches for EDs, especially global crises. Further research is essential to understand the long-term effects of the pandemic on EDs and to refine treatment strategies to better support affected individuals.

Keywords: COVID-19; eating disorders; anorexia nervosa; bulimia nervosa; mental health; retrospective analysis; pandemic impact

1. Introduction

The COVID-19 pandemic profoundly disrupted global health systems and exacerbated pre-existing mental health problems, particularly Eating Disorders (EDs) [1,2]. EDs, which include conditions like Anorexia Nervosa (AN), Bulimia Nervosa (BN) and Binge Eating Disorders (BED) are characterized by severe disturbances in eating behavior and an unhealthy preoccupation with body weight and shape [3,4]. These disorders can lead to significant physical and psychological consequences. The pandemic has intensified these issues due to its drastic social restrictions and disruptions to daily routines, which significantly increased anxiety and stress levels across the population [5,6]. Such an environment has proven conducive to the exacerbation of EDs. Social isolation and the loss of structured routines have been particularly detrimental, often resulting in the worsening of symptoms and higher relapse rates among individuals with these disorders [7].

Several studies from different global areas have reported the clinical impact of the pandemic, particularly the effect of lockdowns on the clinical presentation of EDs [8,9]. While the pandemic has been evaluated as a global traumatic event, individuals with EDs appear to have experienced more severe effects than the general population or people with specific vulnerabilities [10]. Several global studies, such as those from Germany and Portugal, demonstrated that individuals with EDs not only experienced symptom exacerbation but also struggled with increased rates of depression and anxiety [11]. A review by Koitan et al. (2023) [12] emphasized that even those without a pre-existing diagnosis were at risk, as the pandemic's stressors led to an increase in maladaptive coping strategies like emotional eating emphasized that even those without a pre-existing diagnosis were at risk, as the pandemic's stressors led to an increase in maladaptive coping strategies like emotional eating. These findings have prompted clinicians and researchers to question the reasons behind these specific effects on EDs, though no definitive conclusions have been reached so far, according to the existing literature reviews [13,14].

This study aims to assess the changes in the presentation and severity of EDs before and after the pandemic at the Regional Residential Center for Eating Disorders "Mariconda" in Salerno. By comparing data from both periods, the study seeks to understand how the pandemic has altered the landscape of EDs. The findings aim to offer critical insights that will increase the currently available information about the effect of the pandemic on the ED field, looking at the possible development of more effective treatment strategies and interventions, ensuring that individuals with EDs receive the necessary support and care in future situations of global crisis.

2. Materials and Methods

This retrospective cohort study analyzed data from 162 patients admitted to the Residential Center for Eating Disorders "Mariconda" in Salerno over a five-year period, from December 2018 to December 2023. The study employed the onset of pandemic restrictions in mid-2020 within the Campania Region as a pivotal point, dividing participants into pre-pandemic and post-pandemic groups. The inclusion criteria were straightforward: patients needed to have been admitted to the center within the designated timeframe and have a clinically diagnosed ED per DSM-5 criteria by a trained psychiatrist [15]. These disorders included AN, BN, or BED.

Comprehensive demographic and clinical data were meticulously gathered for each patient. This information included age, gender, educational background, history of prior hospital admissions, admission diagnosis specifics, body mass index (BMI), and the occurrence of amenorrhea where applicable. The diagnosis and the psychiatric comorbidities were evaluated using a clinical interview based on the Structured Clinical Interview for DSM-5 (SCID-5- CV). Such detailed profiling allowed for a nuanced understanding of the patient characteristics across both temporal groups.

The patients were systematically categorized into pre-pandemic or post-pandemic groups based on their admission dates. This division aimed to provide a clear comparison of how the pandemic and its associated restrictions might have influenced the presentation and progression of EDs, thereby facilitating a better understanding of potential shifts in clinical manifestations and informing optimized treatment strategies.

Statistical analysis

The statistical analysis in this study was conducted using standard inferential statistics to compare the pre-pandemic and post-pandemic groups across several demographic and clinical variables. Descriptive statistics, including means and standard deviations, were calculated for continuous variables such as age and BMI, while categorical variables like gender, educational attainment, and comorbidities were reported as percentages.

For comparing the two groups, t-tests were used for continuous variables (e.g., age) to assess whether there were statistically significant differences between the pre- and post-pandemic cohorts. A chi-square test was employed for categorical variables (e.g., gender distribution, comorbidities) to evaluate whether the observed differences were due to chance.

Statistical significance was set at a p-value of less than 0.05.

3. Results

3.1.1. Demographic Characteristics

In this study involving 162 patients admitted to the Regional Residential Center for Eating Disorders "Mariconda" in Salerno, a considerable shift emerged in the demographics and characteristics of those admitted before and after the onset of the COVID-19 pandemic. Out of the total cohort, 115 (71%) patients were admitted following the onset of the pandemic, comprising what was defined as the post-pandemic group. This group presented a significant age difference compared to the pre-pandemic group, with younger individuals predominating the admissions post-pandemic onset. This trend suggests that younger people might have experienced heightened vulnerability to the stressors imposed by the pandemic, leading to an increased incidence or exacerbation of EDs during this time. Alongside the age disparity, educational attainment was another differentiating factor. The post-pandemic group demonstrated noteworthy lower levels of educational accomplishment compared to their pre-pandemic counterparts, which is consistent with their younger ages. This decrease might also reflect broader socio-economic impacts of the pandemic, such as educational disruptions and increased stress levels, which could contribute to the destabilization of mental health and the emergence or worsening of EDs. These findings underline the necessity for targeted interventions that address the specific needs of younger individuals and those with lower educational backgrounds, particularly in the context of ongoing or future global disruptions (Table 1). The p-values reported in Table 1 indicate that there were statistically significant differences between the pre- and post-pandemic groups in terms of age ($p = 0.009$), educational attainment ($p = 0.025$), previous hospitalizations ($p = 0.007$), comorbidities ($p = 0.009$), and the use of antipsychotic medications ($p = 0.050$). These findings suggest that the post-pandemic group exhibited more severe psychopathological profiles, as evidenced by the higher frequency of comorbidities and increased use of antipsychotics.

3.1.2. Clinical Characteristics

Despite the differences in demographic characteristics, no significant differences were found between the pre-pandemic and post-pandemic groups regarding gender distribution, initial diagnosis upon admission, average BMI or the presence of amenorrhea.

The distribution of ED diagnoses was as follow: 81% AN in pre-pandemic group vs 89% AN in post-pandemic group; 17% BN in pre-pandemic group vs 9% BN in post-pandemic group; 2% BED in pre-pandemic group vs 2% BED in post-pandemic group.

3.1.3. Comorbidities with Other Mental Illnesses

During the post-pandemic period, patients admitted to our Center exhibited more severe psychopathological profiles, highlighting the complex and multifaceted impact of the pandemic on mental health. There was a marked increase in the frequency of psychosis diagnoses among these patients, which necessitated specific pharmacological interventions. The rise in comorbid psychosis could be attributed to several pandemic-related factors, including prolonged social isolation, heightened anxiety, and the destabilization of usual coping mechanisms. These factors may have acted as catalysts, worsening existing mental health issues and underscoring the vulnerability of this patient population to significant psychosocial stress. The surge in psychoses during the post-pandemic period was marked by delusional thoughts not only focused on body image, as typically observed in individuals with EDs, but also by the emergence of pronounced hallucinatory episodes, often of a paranoid and obsessive type. This concerning development underscores the exacerbating influence of pandemic-related stressors in triggering or intensifying severe mental health conditions. The pandemic's unique confluence of prolonged isolation, pervasive anxiety, and disruption of daily life likely served as catalysts, intensifying vulnerabilities and leading to more complex psychiatric presentations. The management of these cases often required the use of atypical antipsychotics, indicating the need for tailored and intensive treatment approaches to address these complex clinical presentations effectively.

Table 1.

	Age	Education	Past Hospitalization	Comorbidity	Antipsychotic
Pre-pandemic	20.6 ± 5.6	49% < secondary school diploma	26% yes	82% yes	39% yes
Post-pandemic	18.3 ± 4.8	67% < secondary school diploma	49% yes	94% yes	53% yes
p-value	0.009	0.025	0.007	0.009	0.050

3.1.4. Hospital Admission Pattern

A noteworthy observation in this study was the significant rise in the frequency of previous hospital admissions among the post-pandemic group. This trend suggests that individuals admitted during the pandemic period were more likely to have experienced severe episodes of EDs. Despite the heightened frequency of admissions, the length of hospital stay did not significantly differ between the pre-pandemic and post-pandemic groups. This finding may indicate that while the severity or recurrence of episodes increased, the treatment protocols and resources available remained effective in managing acute episodes within a similar timeframe. It highlights the resilience and adaptability of the healthcare system in maintaining consistent care standards even amid a global crisis.

4. Discussion

The study's findings indicate that the COVID-19 pandemic has significantly affected the presentation and severity of EDs. The post-pandemic group was characterized by younger age and lower educational levels, suggesting that younger individuals may have been disproportionately impacted. The pandemic's disruptions, such as school closures and social isolation, likely contributed to the earlier onset and increased severity of EDs within this demographic [16,17]. An increase in previous hospital admissions in the post-pandemic group highlights the potential for more severe or recurrent episodes during the pandemic. This suggests that the stress and uncertainty during this period, along with disruptions to regular healthcare services, may have resulted in delayed treatment and more severe presentations upon admission. These findings align with previous studies that reported changes in the clinical presentation of individuals requiring specialized intensive treatment and support the idea that the pandemic may have significant implications for healthcare organizations [18,19]. Moreover, the description of more severe symptomatology, with higher levels of psychotic symptoms, may highlight evidence of a significant and profound shift in the landscape of EDs reported worldwide [20]. The social isolation disrupted daily routines and coping mechanisms, leading to an increase in maladaptive behaviors such as binge eating and purging. This mirrors your study's findings of increased psychotic symptoms, including hallucinations and paranoia, likely exacerbated by the pervasive anxiety and isolation brought on by the pandemic [21].

Moreover, the pandemic intensified the mental health burden on individuals from lower socio-economic backgrounds, largely due to increased stress, reduced access to healthcare, and limited financial resources. Napp et al. (2023) [22] explored how younger individuals, particularly adolescents from low-income families, were disproportionately affected by anxiety and depression during the pandemic, leading to a worsening of ED symptoms, especially among females who reported higher anxiety levels than males [23]. This aligns with our study's finding that younger individuals with lower educational attainment experienced more severe psychopathological profiles in the post-pandemic period.

Similarly, Smith et al. (2024) [24] found that families facing economic instability during the pandemic experienced heightened psychological distress, contributing to the onset or exacerbation of EDs. The financial strain and caregiver burden further limited these families' access to timely mental health interventions, which contributed to an increase in comorbidities such as depression and psychosis. The data underscores the urgent need for targeted, comprehensive treatment strategies that address the unique challenges posed by the pandemic. Early intervention is particularly critical for younger individuals, who seem more vulnerable to pandemic-related effects [25]. Integrated approaches combining medical, psychological, and nutritional support are essential to meet the complex needs of ED patients effectively [26]. This shift emphasizes the importance of comprehensive treatment plans that incorporate both pharmacological, psychotherapeutic and cognitive rehabilitative strategies, ensuring holistic care [27]. The increased complexity of cases observed during the pandemic has significant implications for healthcare systems. As highlighted in our study, the rise in antipsychotic use among the post-pandemic group underscores the need for more intensive, multidisciplinary treatment approaches. According to a 2024 report by STRIPED and Deloitte, the economic costs of EDs are not limited to direct treatment expenses but also include broader societal costs, such as loss of productivity and informal caregiving. This report stresses the importance of developing comprehensive care models that address both the medical and psychological aspects of EDs to reduce the long-term societal burden [28]. Additionally, it highlights the critical need for mental health services to adapt rapidly to emerging patterns in mental illness precipitated by global crises. Bolstering mental health services and support systems to handle increased demand and case complexity during disruptive events is crucial. Enhancing preventative care and ongoing support could potentially reduce repeated hospitalizations and improve overall patient outcomes in future crises. Furthermore, the pandemic has highlighted the importance of telehealth as a crucial tool for providing continuous care and support during lockdowns and social distancing. While telehealth in the field of EDs has been applied since the beginning with positive effects, it appears challenging to implement for individuals with severe and clinically significant profiles [29,30], such as those included in this study. Indeed, while telehealth offers flexibility and accessibility, further research is necessary to evaluate its long-term effectiveness in ED treatment, calling for studies on hybrid approaches [31]. On the other hand Telehealth emerged as a crucial tool for maintaining care continuity during lockdowns, but its effectiveness, particularly for severe ED cases, remains debated. A study by Murphy-Morgan et al. (2024) [32] found that while telehealth provided essential social support during isolation, it was not always sufficient for individuals with more complex psychiatric needs. These patients faced barriers such as digital literacy issues and the inability to engage meaningfully in virtual therapy settings. Hybrid care models that combine in-person and remote care were recommended to improve outcomes for these individuals [33,34].

Limitations

This study has several limitations that should be acknowledged. First, its retrospective design may introduce bias due to the reliance on historical data, which may not have been collected with the current research objectives in mind. Additionally, being a single-center study limits the generalizability of the findings, as the results may reflect specific institutional practices or regional factors that do not apply to other settings. The naturalistic approach, while useful for capturing real-world clinical conditions, lacks the control of experimental studies, which can affect the consistency of treatment and outcome measurement. Lastly, the sample consists of individuals admitted for inpatient treatment, typically those with more severe symptomatology, which may further limit the generalizability to less severe cases or outpatient populations.

Future Directions for Psychosocial Interventions in the Treatment of Eating Disorders: Lessons Learned from the Pandemic

To address the psychosocial challenges described in the article on eating disorders (EDs) during the COVID-19 pandemic, several targeted interventions can be implemented to mitigate the worsening of symptoms and improve patient outcomes. Integrated care models that combine medical, psychological, and social support are essential, as EDs often have complex biopsychosocial

underpinnings. Establishing multidisciplinary teams that include dietitians, mental health professionals, and social workers can offer holistic care to address both the psychological and physical aspects of EDs. This approach ensures patients receive comprehensive treatment for comorbidities like anxiety, depression, and psychosis, which were heightened during the pandemic.

Telehealth services, while beneficial, should be augmented with in-person therapy where possible, especially for patients with severe psychiatric presentations. Implementing hybrid models combining digital and face-to-face consultations—can improve access to care, particularly for those in remote or underserved areas. However, it is crucial to enhance the digital literacy of patients and caregivers to ensure meaningful engagement in remote therapy.

Given the impact of social isolation on ED symptoms, community-based interventions that foster social connectedness can be particularly effective. Peer support groups whether online or in person can provide patients with a sense of belonging and reduce feelings of isolation, a key trigger for disordered eating behaviors. Addressing the socioeconomic stressors exacerbated by the pandemic is essential. Access to financial support, educational resources, and vocational training can alleviate the pressures faced by lower-income individuals, who are at higher risk for ED exacerbation during crises.

Lastly, public health campaigns that promote body positivity and counter harmful social media messages regarding weight and appearance can help reduce the social pressures that fuel EDs, particularly among adolescents. These multifaceted interventions, designed to address both psychosocial and structural determinants, are crucial for mitigating the long-term impact of global crises on ED patients.

5. Conclusions

This study offers valuable insights into how global crises, such as the COVID-19 pandemic, have exacerbated the severity and presentation of eating disorders (EDs). Younger individuals and those with lower educational attainment were particularly vulnerable to the socio-economic and psychological stressors caused by the pandemic, leading to the onset or worsening of ED symptoms. Reduced access to mental health services, financial instability, and disruptions in social and educational support systems intensified these issues, with the post-pandemic cohort showing a higher frequency of comorbid mental illnesses and psychotic symptoms.

The rise in psychotic symptoms highlights the profound impact of prolonged isolation, anxiety, and the loss of structured routines, underscoring the need for targeted mental health interventions. Early intervention, especially for younger individuals, is crucial to mitigate the long-term effects of pandemic-related stressors. Integrating medical, psychological, and nutritional support into treatment plans is essential for addressing the multifaceted nature of EDs.

The study also emphasizes significant gaps in mental health services during the pandemic, particularly for those with severe psychiatric comorbidities. The increase in antipsychotic medication use points to the growing complexity of cases, and the healthcare system's need to adapt to the emerging patterns of mental illness during global crises. This includes improving mental health service accessibility and developing preventive strategies to address mental health disorders.

Finally, while telehealth proved useful during lockdowns, it may be less effective for patients with severe psychiatric conditions. The study calls for further research into hybrid care models that combine telehealth with in-person care to maximize treatment efficacy for individuals with complex profiles, especially during periods of global disruption.

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