

Emergency Department access of patients with eating disorders and the impact of SARS-CoV-2 pandemic: a 20 years retrospective analysis

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ABSTRACT

INTRODUCTION. Patients suffering from eating disorders represent a highly vulnerable and fragile population. The recent SARS-Co-2 pandemic and its impact on public health and behavioral habits created the conditions for an overall increase in most types of mental disturbances, thus including eating disorders. The combined effects of the psychological stress (deriving from confinement and forced cohabitation, loneliness, sadness, fear, anxiety, and concerns about the uncertainty of life) had deeply increased the psychological discomfort of these patients, with possibly a significant impact on their mental status.

AIM OF THE STUDY. To evaluate the impact of the SARS-CoV-2 pandemic on the onset of acute complications of patients suffering from eating disorders through the comparison of the rates of access of these patients to a national reference emergency hub in the last 2 years with those recorded in the previous pre-pandemic period.

PATIENTS AND METHODS. Our study retrospectively reviewed the clinical records of patients affected by eating disorders admitted to the Emergency Department (ED) of Policlinico A. Gemelli, IRCCS of Rome for acute medical complications over 20 years (2003-August 2022). The rate of access and ward admission in the non-pandemic (2003-2019) and the pandemic (2020-2022) periods were compared. Overall, 344 patients (21 males and 325 females), were included in the study cohort (age 28.0 [IQ range 20.8-36.8]).

RESULTS. The patients referring to our ED during the 2 pandemic period were 61 (2 males, 59 females) aged 23.7 [19.3-31.6], while the non-pandemic period subjects were 283 (17 males, 266 females) aged 23.7 [19.3-31.6]. The patients in the pandemic period were significantly younger than in previous years ($p<0.01$). The number of patients evaluated and admitted to the ward per year almost doubled in the pandemic period. The number of visits per month was significantly higher in the pandemic period compared to the non-pandemic period (1.91 vs. 1.39, $p<0.01$), as well as the number of admission/per month (1.19 vs. 0.90, $p<0.01$).

CONCLUSIONS. Our results, showing a one-third increment of the year/rate of ED admission of patients suffering from eating disorders, confirm the high impact of the SARS-CoV-2 pandemic on the clinical decompensation of subjects suffering from eating disorders. The modifications of the behavioral habits (confinement, restriction, loneliness, fear, anxiety, and familiar insecurity) and possibly dietary changes induced by the SARS-CoV-2 pandemic may cause a negative evolution in vulnerable and younger individuals.

KEYWORDS

EATING DISORDERS

EMERGENCY

SARS-COV-2 PANDEMIC

INTRODUCTION

Eating disorders represent an often overlapped range of mental disturbances, defined as persistent abnormal eating behavior able to negatively affect personal physical or mental health, with a typical onset in late childhood to early adulthood¹. Their prevalence is deeply scattered, reflecting differences in gender, age, culture, and methods used for diagnosis or measurement as well¹.

Eating disorders occur nearly ten times more often in females than males, representing a true disease or just a clinical “tract” in as much as 4% of women in developed countries²⁻⁴, with much lower figures in less developed areas².

The patients suffering from eating disorders represent a highly vulnerable and fragile population that requires to be addressed with carefully specific approaches, in some instances also involving assistance by an emergency unit, mainly due to severe electrolyte imbalance, syncope, seizures, and other acute medical conditions⁵⁻⁷.

Undoubtedly, the recent worldwide outbreak of the SARS-CoV-2 and its related pandemic (which caused more than 618 million cases and 6.54 million confirmed deaths)⁸, posed a great impact on public health and behavioral habits, creating the conditions for an overall increase of most types of mental disturbances, thus including eating disorders⁹⁻¹⁰.

The combined effects of the psychological stress deriving from house confinement with never-before-experienced restrictions (lockdown measures), forced cohabitation, loneliness, isolation, sadness, fear, anxiety, and concerns about the uncertainty of life had dramatically increased the psychological discomfort of these patients, with a significant impact on emotional and social spheres⁹⁻¹⁰. Moreover, the restrictions imposed by the health authorities have often limited the accessibility of health assistance, causing significant limitations or even interruptions in “face-to-face” mental care, thus further compromising the state of psychiatric patients⁹⁻¹².

This report aims to evaluate the impact of the SARS-CoV-2 pandemic on Emergency Department (ED) access and acute complications in patients suffering from eating disorders.

PATIENTS AND METHODS

Study design

The study enrolled all the patients consecutively admitted to our ED for 20 years, from January 2003 to August 2022, who were evaluated in ED for conditions related to eating disorders. The ED of Fondazione Policlinico Universitario A. Gemelli, IRCCS, has an annual attendance of about 75,000 patients/year and a catchment area of 1.8 million inhabitants. The ED is part of a teaching hospital which is a tertiary referral center for eating disorders.

The patients included in the analysis had an eating disorder diagnosis assessed according to the Diagnostic and Statistical Manual of Mental Disorder-V. We excluded from the analysis the patients accessing the ED for major trauma and pregnant women. We also excluded patients with eating disorders admitted for advanced cancer or terminal illness non strictly associated with the eating disorder.

The ED clinical charts were reviewed to evaluate demographic data (age, sex), clinical presentation at the ED, including the self-referral or access by emergency transport, the triage code assigned at admission, the main symptoms for ED access, and the ED disposition (discharge or admission to a hospital ward).

Outcome measures

The following outcome measures were assessed:

- The number of ED visits for eating disorders and the percentage of whole ED visits per year.
- The number of urgent ward admission for eating disorders and the percentage of whole ED visits per year.
- The number of patients/month evaluated in the pandemic and the non-pandemic period
- The number of patients/month admitted to the Hospital ward in the pandemic period and the non-pandemic period.

Study endpoints

The main study endpoint was to compare the ED admission/month in the pandemic period compared with the non-pandemic period.

As secondary endpoints, we evaluated the urgent ward admission/month in the pandemic period compared with the non-pandemic period, and the temporal trend of the number of visits/years and ward admission/year in the 20-year observation period.

Statistical analysis

Continuous variables were presented as median [interquartile range] and statistically compared by

the Mann-Whitney U test. Categorical variables were presented as total number and percentage and compared by the Chi-square test. The rate of admission per/year and per/month was calculated on the total number of ED admission. The comparison between visits/month and the admissions/month for each period were compared by *t*-test for unpaired data. The statistical analysis was performed by SPSS v25 (IBM, Armonk, NY, USA).

RESULTS

A total of 344 patients (19 males and 325 females), aged 28.0 [20.8-36.8] were included in the study cohort. Minor (<18 yr old) subjects accounted for 6.5% of overall patients. Eleven patients were neo-diagnosed with an eating disorder at the very moment of ED admission.

The patients referring to our ED during the 2.5 yr pandemic period were 61 (2 males, 59 females) aged 23.7 [19.3-31.6], while the non-pandemic period subjects were 283 (17 males, 266 females) aged 23.7 [19.3-31.6]. The patients in the pandemic period were significantly younger compared to the previous years ($p < 0.01$) (Table 1).

Most of the patients were self-referred to the ED visit (234, 68.0%), and there were no significant differences between the two periods (Table 1). Most of the patients were assigned an “ambulatory” code at the triage evaluation, whereas about 1/3 of the patients were considered urgent or emergency (Table 1). Interestingly, the patients evaluated in the ED during the pandemic period were generally less urgent than in previous years.

Most of the patients were admitted to the ED for malaise/fatigue (145 patients, 42.2%), electrolyte disturbances (114 patients, 33.1%), and syncope (53 patients, 15.4%). The main symptoms of ED access were similar in the two periods except for syncope and malaise/fatigue, which were less frequently reported in the pandemic period (Table 1).

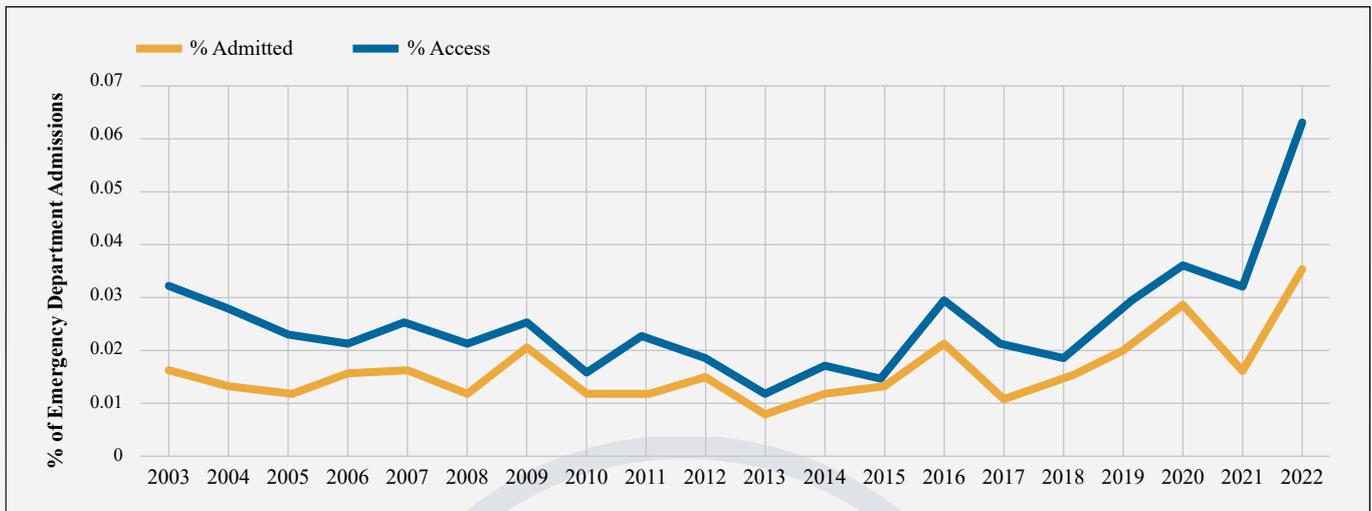
Temporal trend in the ED access

The rate/year of patients with eating disorders accessing our ED was stable over the 17 years of observation in the pre-pandemic period. The number of patients evaluated ranged from 21 in 2003 to 23 in 2017 and comprised between 0.032% and 0.012% of the ED access. Similarly, the patients admitted to the hospital ward ranged between 8 and 12 per year. The number of patients evaluated and admitted to the ward per year consistently raised during the pandemic period, as shown in Figure 1.

Table 1. Demographic and symptoms at Emergency Department admissions for patients with eating disorders in the pandemic period (2020-2022) compared with the previous years (2003-2019).

| Variable | All Patients n 344 | Non-Pandemic (2003-2019) n 283 | Pandemic (2020-2022) n 61 | p-value |
|--------------------------------|-----------------------|--------------------------------------|---------------------------------|-----------------|
| Sex (female) | 325 (94.5%) | 266 (94.0%) | 59 (96.7%) | 0.397 |
| Age | 28.0 [20.8-36.8] | 28.2 [21.9-37.5] | 23.7 [19.3-31.5] | <0.01 |
| ED Presentation | | | | |
| Self-referred to the ED | 234 (68.0%) | 196 (69.3%) | 38 (62.3%) | 0.346 |
| Triage code assigned | | | | |
| - Emergency | 8 (2.3%) | 5 (1.8%) | 3 (4.9%) | 0.024 |
| - Urgency | 101 (29.4%) | 92 (32.5%) | 9 (14.8%) | |
| - Ambulatory | 232 (67.4%) | 184 (65.0%) | 48 (78.7%) | |
| - Inappropriate | 3 (0.9%) | 2 (0.7%) | 1 (1.6%) | |
| Main symptoms | | | | |
| Electrolyte disturbances | 114 (33.1%) | 99 (35.0%) | 15 (24.6%) | 0.118 |
| Syncope | 53 (15.4%) | 49 (17.3%) | 4 (6.6%) | 0.035 |
| Malaise/ Fatigue | 145 (42.2%) | 129 (45.6%) | 16 (26.2%) | 0.005 |
| Abdominal pain | 22 (6.4%) | 19 (6.7%) | 3 (4.9%) | 0.777 |
| Vomit | 47 (13.7%) | 39 (13.8%) | 8 (13.1%) | 0.891 |
| Peripheral edema | 14 (4.1%) | 11 (3.9%) | 3 (4.9%) | 0.721 |
| Fever/ infections | 23 (6.7%) | 16 (5.7%) | 7 (11.5%) | 0.099 |
| Pain (non-abdominal) | 11 (3.2%) | 7 (2.5%) | 4 (6.6%) | 0.111 |
| ED disposition/ outcome | | | | |
| Hospital ward admission | 222 (64.5%) | 184 (65.0%) | 38 (62.3%) | 0.687 |
| Refuses admission | 20 (5.8%) | 15 (5.3%) | 5 (8.2%) | 0.381 |

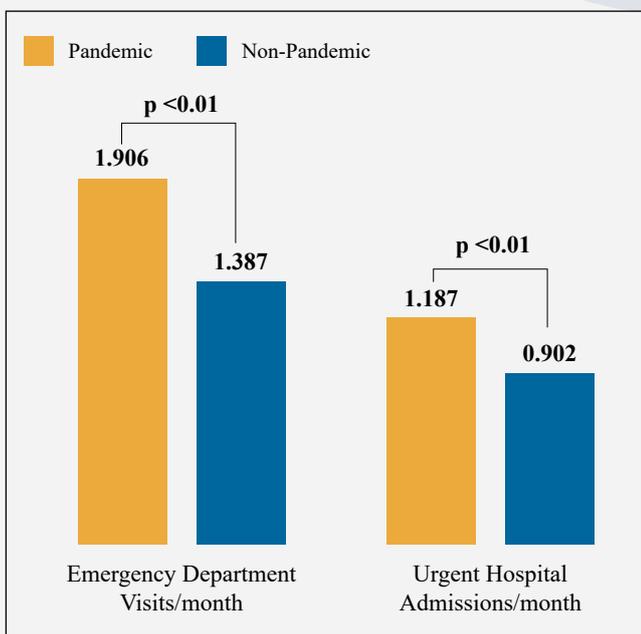
Figure 1. Temporal trends of Emergency Department admissions for Eating Disorders in the past 20 years. Value are expressed as percentage of ED access/year. Separate trends are shown for visits and hospital ward urgent admissions.



During the pandemic period number of patients/year doubled compared to the previous years, reaching 0.062% of the whole ED access in 2022 (and 0.035% of admission to ward).

The number of visits per month was significantly higher in the pandemic period compared to the non-pandemic period (1.91 vs. 1.39, $p < 0.01$) as well as the number of urgent ward admission per month (1.19 vs. 0.90, $p < 0.01$) (Figure 2).

Figure 2. Comparisons of Emergency Department access per month and urgent admission per month in the pandemic period (2020-2022) compared with the previous years (2003-2019). Values are expressed as patients/months. Statistical comparison is made by t-test for unpaired data.



DISCUSSION

The main finding of the present study is that during the past years, the annual rate of patients accessing the ED and admitted to the hospital ward for eating disorders was stable. Since the beginning of the pandemic, we observed a sharp increase in eating disorder patients in the ED, along with a higher number of younger patients as compared to the past. Our results, showing a one-third increment of the year/rate of ED admission of patients suffering from eating disorders, confirm the very high impact posed by the SARS-CoV-2 pandemic on the clinical decompensation of subjects suffering from eating disorders. These data are consistent with previous reports obtained in smaller series and reviews on this subject¹³⁻¹⁶.

In our series, only two patients were referred to ED due to clinical problems directly linked to COVID infection, thus confirming that the pandemic act on the disease mainly through the difficult-to-bear psychological stress deriving from confinement, restriction, loneliness, sadness, fear, anxiety and concerns, thus “pressuring” fragile and vulnerable individuals to a negative evolution.

The observation of the significantly lower age of patients referred in the pandemic period could be associated with an increased risk of decompensation in younger patients, as previously described in recent reports^{17,19}. Along with the psychological stress posed by the pandemic, it could also be speculated that dietary changes due to lockdown and self-isolation could increase the risk for eating disorders, particularly in younger people²⁰⁻²¹.

CONCLUSIONS

Our data confirm that families and physicians should be fully aware of the mental risk connected with the pandemic, being able to monitor and promptly detect any signs or symptoms of eating disorders. Nonetheless, more multi-center studies are required to fully evaluate these factors and the long-term consequences of the pandemic (and its consequent restrictions) on the population's health. In this regard, it may be crucial to develop structures where social and educational sharing can occur even in pandemics, addressing the complex psychological needs of patients, especially teenagers.

Conflict of Interest

The authors declare that they have no conflict of interest concerning this article.

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