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Regional Residential Centre for Eating Disorders "Mariconda": experience of a new frontier of care in the South of Italy

Francesco Monaco, Annarita Vignapiano, Marilena Di Pierro, Antonella Boccia, Ilona Forte, Anna Longobardi, Rossella Bonifacio, Stefania Landi, Stefania Palermo, Annarita Mainardi, Emanuela Ferrara, Giulio Corrivetti

Azienda Sanitaria Locale, Salerno

Annarita Vignapiano

Summary

Objectives. Eating Disorders (ED) represent one of the most common health problems in Western countries. This paper reports a descriptive analysis of the sample of ED patients admitted in residential rehabilitation at the Regional Residential Centre for ED "Mariconda" of Azienda Sanitaria (ASL) Salerno in the first 4 years of activity.

Methods. The sample includes patients admitted to residential care from December 2017 to December 2021. Admission at the Centre follows the criteria of the DSM-5 and the "National Guidelines for Nutritional Rehabilitation in Eating Disorders". Anthropometric parameters were collected for each subject at admission and discharge.

Results. Of the 105 inpatients, 10.5% was voluntary discharge in the first 8 days from admission; of the remaining 94, 5.4% were male, 94.6% female. 84% of the sample suffered from AN, 12.8% from BN, 3.2% from BED. The mean age of the sample is 19.24 ± 5.31 years, more than 66% of the entire sample was hospitalized between 2020 and 2021. The mean duration of hospitalization was 104.2 ± 70.3 days, with AN patients having the longest duration (108.5 ± 70) compared to the other categories. The mean BMI of the sample at admission was 16.533.4 kg/m^2; the mean BMI of the sample at discharge was 18.72.5. The sample originated about 70% from outside the ASL and 6% from outside the region. A positive correlation was found between BMI at discharge and length of stay ($r = 0.22$; $p = 0.032$).

Conclusions. The sample analyzed confirms the distribution of ED, especially AN, predominantly in females and adolescents/young adults; AN requires longer treatment, aimed at a better recovery of psycho-physical conditions. Over the last two years, the trend in the number diagnosis has been on the increase, due both to the SARS-CoV-2 pandemic, but also to the population's greater awareness of the disease, resulting in an earlier and more frequent diagnosis.

Key words: eating disorders, anorexia, rehabilitation, residential treatment

Introduction

The revision of the diagnostic criteria published in the new edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) [1] set itself the goal of defining greater diagnostic continuity between adolescence and adulthood, adapting the criteria to the possibility of making the diagnosis also in childhood and adolescence, and uniting eating disorders with nutrition and

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Correspondence:
Annarita Vignapiano
annarita.vignapiano@gmail.com

Conflict of interest
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eating disorders, which in DSM-IV [2] were included among the disorders that began in childhood and adolescence. The chapter is therefore defined as: 'Nutrition and Eating Disorders' and includes the following diagnoses: Pica, Rumination Disorder, Avoidant/Restrictive Eating Disorder, Anorexia Nervosa (AN), Bulimia Nervosa (BN), Binge-eating disorder (BED), Nutrition or Eating Disorder with other specification, Nutrition or Eating Disorder without specification. For Anorexia Nervosa the DSM-5 introduced two important changes in the diagnostic criteria: the first is the abolition of the DSM-IV criterion 'amenorrhea' because it cannot be applied to males, menopausal, premenopausal women and those taking estrogen and because some people exhibit all the other signs of Anorexia Nervosa but continue to menstruate. The second concerns the change of criterion A, which in DSM-IV required less than 85 per cent of what was expected (i.e., a BMI < 17.5) or the inability to reach the expected weight during growth, whereas in DSM-5 a significantly low weight below the minimum normal (i.e., BMI < 18.5) or, for children and adolescents, below the minimum expected weight (i.e., < 5th percentile) is required. In addition, the phrase "refusal to maintain body weight above or at the minimum normal weight for age and stature" was removed because it required intention on the part of the patient and could be difficult to assess objectively. In criterion C, the phrase "persistent behavior that interferes with weight gain, even in the presence of a significantly low weight" was added. Finally, criteria were introduced to assess the current level of severity based on BMI. For Bulimia Nervosa the DSM-5 retained the same diagnostic criteria as the DSM-IV except for criterion C (frequency and duration of binges). It is now required that binge eating and inappropriate compensatory behavior both occur on average at least once a week for three months, whereas in DSM-IV they had to occur at least twice a week for three months. Furthermore, as for Anorexia Nervosa, criteria were introduced to assess the current level of severity based on the number of episodes of compensatory conduct per week. Finally, the two subtypes (with and without elimination behavior) in the DSM-IV have been eliminated.

All Eating Disorders are more frequent in the female population than in the male population: in studies conducted on clinical populations, men account for 5-10% of all Anorexia Nervosa cases [3] and 10-15% of Bulimia Nervosa cases [3]. The incidence of Anorexia Nervosa is at least 8-9 new cases per 100,000 persons per year among women, while for men it is between 0.02 and 1.4 new cases. The incidence of Anorexia Nervosa is estimated to be at least 8 new cases per 100,000 persons per year among women, and between 0.02 and 1.4 new cases per 100,000 persons per year among men [3]. The incidence of Bulimia Nervosa is estimated to be at least 12 new cases per 100,000 persons per year among women and approximately 0.8 new cases per 100,000 persons per year among men [3]. In both Anorexia Nervosa and Bulimia Nervosa, the age group in which onset occurs most often is between 15 and 19 years. Some recent clinical annotations have reported an increase in early-onset cases [4]. This increase is partly explained by the lowering of the age of menarche observed in recent decades but could also be related to an earlier age at which adolescents are exposed to socio-cultural pressures to be thin, through media such as the Internet [5].

Rehabilitation in ED

Higher levels of care (HLC) – including inpatient hospitalization, residential treatment, partial hospitalization, and intensive outpatient treatment – are frequently utilized within routine care for eating disorders. Treatment approaches within HLC represent critically important alternatives for severe or treatment-refractory ED and aim to match illness severity with treatment dosage, while significantly reducing the overall cost of treatment [6].

Intensive/extensive inpatient/outpatient rehabilitation should be performed in a department specialized in the treatment of eating disorders that is able to provide the patient with a program that integrates nutritional, physical, psychological, and psychiatric rehabilitation.

Intensive rehabilitation represents a crucial node in the care network when: the level of severity and comorbidity is high; the impact on the patient's disability and quality of life is severe; the interventions to be implemented are numerous and it is appropriate, for both clinical and economic reasons, to concentrate them in a relatively short time according to a coordinated project; previous less intensive paths have not given the hoped-for results and the risk for the patient's state of health tends to increase [7]. Specifically, there are four situations that indicate the need for rehabilitation hospitalization: failure to respond to outpatient treatment conducted according to current guidelines; the presence of physical risk that makes outpatient treatment inappropriate; the presence of psychiatric risk that makes outpatient treatment inappropriate; the presence of psychosocial difficulties that make outpatient treatment inappropriate [8].

The Regional Network of Services for Eating Disorders in Campania

The Campania Region has shown an active interest in this issue setting up, since 2009, the Integrated Regional Network of Services for Eating Disorders. The purpose of this network is to set up an integrated regional network of services for the prevention, diagnosis, treatment and rehabilitation of Eating Disorders, to ensure that patients are taken into care at an early stage, to support team work and audits on individual cases, to encourage patients to remain in specific treatment and care facilities close to their own life context and family, to adopt unitary intervention strategies for adolescents, to pursue a rational use of resources, to prevent the onset of organic complications and the chronic nature of the disorders. The nodes of

this network are many: General Practitioners, freely chosen pediatricians, Prevention Departments, Health Districts, schools, sentinels on the territory deputed to the early detection of cases at risk for which it is necessary to provide an in-depth diagnostic investigation within a dedicated outpatient clinic (at least one in each ASL) of the Department of Mental Health competent for the territory. This first-level outpatient clinic, in addition to the in-depth diagnostic activity and the clinical-therapeutic management of cases that do not require intensive treatment, is the junction point towards the next level of care represented by day-hospital or ordinary in-patient treatment. Subsequently, the patient, if necessary, can be started on a therapeutic-rehabilitation pathway in public, semi-residential and residential facilities. The Regional Residential Centre for Eating Disorders "Mariconda" officially opens in December 2017. This paper offers a descriptive analysis of the sample of patients admitted in residential rehabilitation at the Regional Residential Centre for ED "Mariconda" of the Salerno ASL in the first 4 years of activity; another aim of this work is to demonstrate the correlation between anthropometric indices and length of hospitalization.

Materials and methods

Participants

All 105 subjects who were admitted between December 2017 and December 2021 at this Residential treatment program are included in these analyses. They came from Department of Salerno Mental Health and other Departments of Mental Health located in Campania, in the South of Italy.

All subjects included in this report were required to provide consent or assent for the use of data collected. Upon arrival at the facility, patients are required to complete a thorough intake that in includes a medical examination by a primary care physician and a nurse, as well as a meeting with a dietician. In addition to a medical examination, an extensive demographic and clinical assessment is required. The data collection process consisted of two data collection points noted as Admission and Discharge for each subject. The admission data collection procedures began on the day the subject was admitted to residential treatment with participants completing self-report questionnaires after informed consent was obtained. Body weight and height were determined by a calibrated scale and stadiometer. Data on body weight were extracted from the medical record in the same manner as the admission data collection point. Since the sample is heterogeneous, to provide more detailed information on the residents, the data are broken down by diagnosis (Anorexia Nervosa, Bulimia Nervosa, Binge Eating Disorder). Statistical differences by age and diagnosis are presented when appropriate.

Statistical analyses

Means are presented with standard deviations (SD). Comparisons of parametric independent samples were completed using analyses of variance (ANOVA).

Post-hoc Bonferroni corrections were made for multiple comparisons.

A significance level of.05 (after corrections) was used throughout.

To explore possible predictors of response, correlational analyses were performed using a variety of clinical variables to explore possible predictors of outcome. This included age, length of stay in the residential program and admission and discharge BMIs.

Correlations between variables were explored by means of Pearson's and Spearman's correlation tests.

Statistical significance level was set at $p \leq 0.05$ for all tests.

All analyses were carried out using SPSS 27 (SPSS Inc., Chicago, Illinois).

Results

Demographic data

Among the 105 subjects, 11 subjects (10.5%) refused to continue the Program within eight days from the admission. No significant difference was revealed between adult (63.6%) and adolescent (36.4%) $p > 0.01$ (Fig. 1).

Six subjects (5.7%) returned after discharge (for a second stay) after at least three months.

The demographic and clinical characteristics of the 94 study participants are shown in Table I by diagnosis. Of 94 patients with DCA as defined by DSM-V (American Psychiatric Association), all participated in the study, including 79 with AN, 12 with BN and 3 with BED (Tab. I).

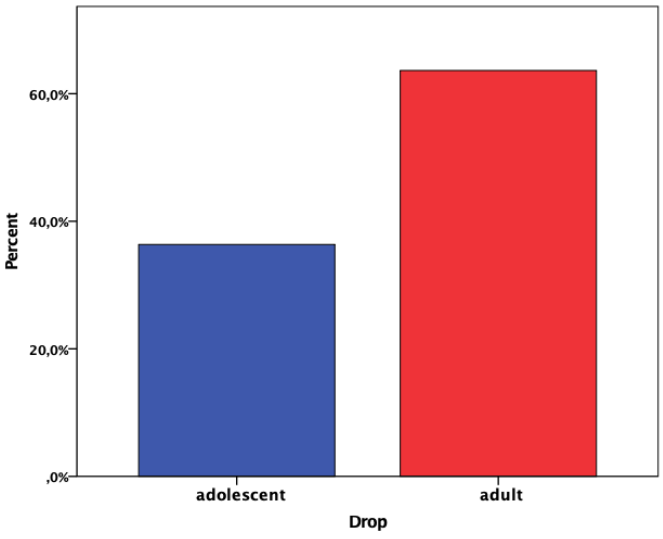

Figure 1.
Percentage of subjects that refused to continue the Program within eight days from the admission.

Table I. Demographic and clinical characteristics of residential treatment.

	Total sample (N = 94)	AN (N = 79)	BN (N = 12)	BED (N = 3)
Diagnosis at Admission %	-	84.0	12.8	32
Age (Mean ± SD)	19.24 ± 5.31	19.37 ± 5.61	18.5 ± 3.31	19.00 ± 4.36
Gender M/F (n)	5/89	5/74	0/12	0/3
Adolescent/adult (%)	47.9/52.1	48.1/51.9	41.7/58.3	66.7/33.3
Admission at residential treatment program (%)				
2018	11.7	10.1	16.7	33.3
2019	22.3	22.8	25.0	33.3
2020	30.9	30.4	33.3	33.3
2021	35.1	36.7	25.0	-
Length of stay (days, Mean ± SD)	104.20 ± 70.31	108.57 ± 70.01	75.92 ± 69.69	102.33 ± 80.93
Admit BMI (kg)	16.53±3.40	15.38± 1.66	22.17 ± 1.81	24.53 ± 8.43
Discharge BMI (kg)	18.77±2.50	18.710 ± 1.58	21.10 ± 2.39	22.46 ± 7.0

AN: Anorexia Nervosa; BN: Bulimia Nervosa; BED: Binge-eating disorder; BMI: Body mass index.

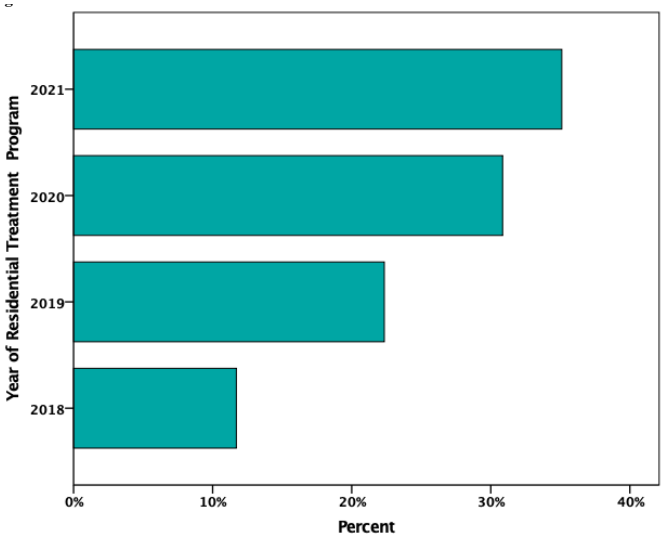

Figure 2.
Admission to rehabilitation treatment program.

The majority of patients was female (N = 94.7%) and included 45 adolescents (47.9%).
The age range of the participants with AN was 12 to 39 years, while that of the BN participants was 13 to 23 years. More than 66% of patients were admitted during the years 2020 and 2021 (Fig. 2).

Clinical characteristics

The majority of patients entering treatment was diagnosed with Anorexia Nervosa (AN), followed by Bulimia Nervosa (BN), and finally Binge Eating Disorder (BED).
The average age was 19.2 years old (SD = 5.3) and the average of admitted BMI was 16.53 (SD = 3.4), with Anorexia Nervosa having a statistically lower admitted

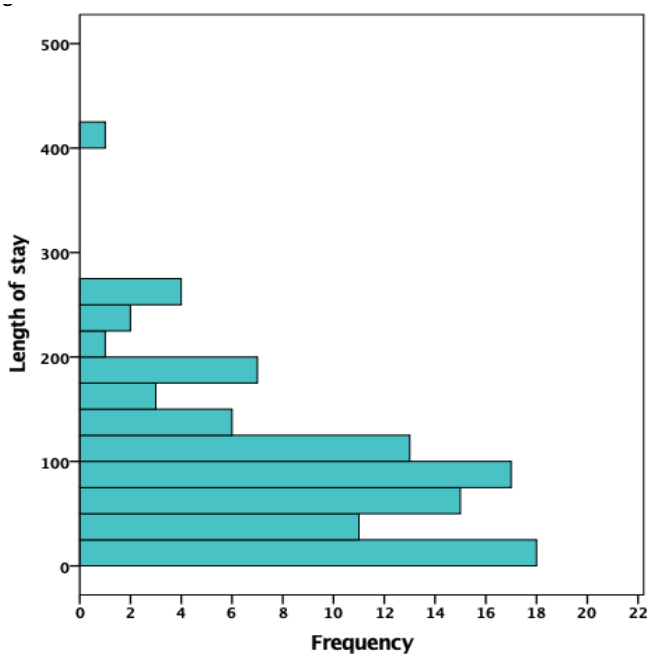

Figure 3.
Length of stay at Regional Residential Centre "Mariconda" of Azienda Sanitaria Locale di Salerno.

and discharge BMI than the comparison conditions $F_{(2, 91)} = 78.54$, $p < .000001$ and $F_{(2, 91)} = 28.74$, $p < .000001$.
Patients had a mean length of stay (LOS) of 104.20 ± 70.31 days (Fig. 3).
No between group differences were reported about age and length of stay ($p > 0.1$).

Correlation analysis

We examined the relationship between the age and the

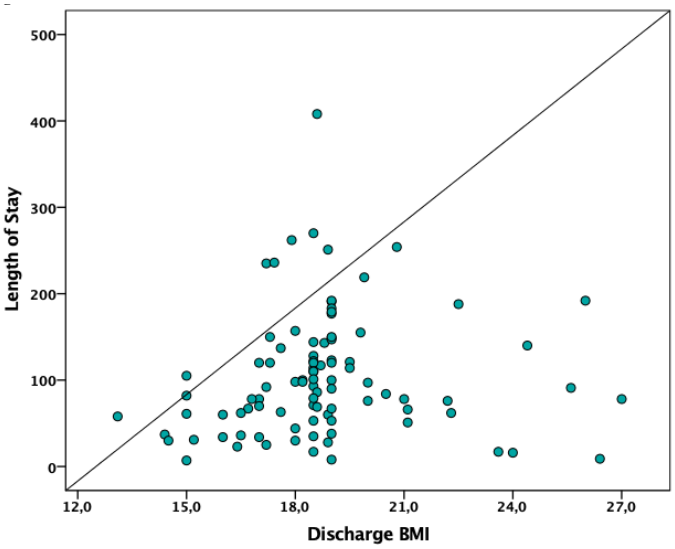

Figure 4.
Correlation between Discharge BMI and Length of stay.

length of stay in the residential setting and measures of Admitted and Discharge BMI. We observed no significant correlations between age and the length of stay and Admitted BMI.
A positive correlation between Discharge BMI and Length of stay ($r = 0.22$; $p = 0.032$; Fig. 4) were found.

Discussion

Anorexia and Bulimia Nervosa are the second leading cause of death among adolescent females, after traffic accidents. According to the latest literature Eating Disorders represent a growing public health problem in industrialized countries [9,10]; the age of onset is increasingly low, access to treatment is often critical and treatments require a good multidisciplinary organization. Treatment pathways are increasingly better structured and focused on the person in his or her complexity, rather than exclusively on the symptoms of the illness: more and more importance is given to the social, relational, communicative and environmental sphere of the person[11] and the treatment process increasingly takes on the meaning of a pathway of change, an experience of growth beyond the illness, in line with the recovery orientation that psychiatry has embraced in recent years [12]. The experience of illness, in fact, involves the person's entire life, devastating all areas and interrupting even their normal daily activities, yet proven interventions allow for the rehabilitation and remission of these aspects, and the earliness with which they are implemented is decisive. The data collected regarding the Regional Residential Centre "Mariconda" of Azienda Sanitaria Locale di Salerno from December 2017 to December 2021 show that 59% of patients suffering from Anorexia Nervosa, 23.2% from Bulimia Nervosa and 11.5% from Binge Eating Disorder were admitted to this Service. Also in the same period, 519 first visits were carried out, of which 31.8% required an assessment for the residential pathway, with 79% coming from outside the ASL; of those who required an assessment, 68% actually needed the residential pathway, with about 70% coming from outside the ASL.
In recent years, partly due to the SARS-CoV-2 pandemic, as evidenced by the most recent literature, the trend of services provided has been increasing [13]. Our results show that the outpatient setting is potentially ideal for the treatment of eating disorders, while the residential setting is only necessary in cases where there is a lack of response to outpatient treatment, the presence of psychosocial difficulties and a mild or moderate physical and/or psychiatric risk. The increase in the trend of services can certainly be attributed to an increase in the number of cases of Eating Disorders, but probably also to an increase in the number of diagnoses made, to a deeper and more widespread knowledge of this problem and to a greater awareness of the population on this subject, which are the results of the prevention, diagnosis, treatment and rehabilitation work carried out by the Regional Network for the Treatment of Eating Disorders.
Although our results are notable, there are some limitations to our study that warrant acknowledgment and discussion. The principal limitation is that it lacks a control or comparison group, another significant limitation of this study is the lack of a follow-up after the discharge.
Future research will be needed to focus on quantifying treatment program effectiveness in the residential treatment of individuals with eating disorders.

Conclusions

The sample analyzed confirms the distribution of ED, especially AN, predominantly in females and adolescents/young adults; AN requires longer treatment, aimed at a better recovery of psycho-physical conditions. In the last two years, also due to the SARS-CoV-2 pandemic, the trend in the number of services provided has been on the rise, attributable to an increase in the number of cases, better knowledge and greater awareness among the population with regard to the subjects, with a consequent increase in the number of diagnoses made.

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