obesità e disturbi dell’alimentazione

Massimo Cuzzolaro

già Università di Roma Sapienza

Editor-in-Chief di *Eating and Weight Disorders. Studies on Anorexia Bulimia Obesity*
2015 world population: about 7.5 billion

It is currently growing (births – deaths) at 2.4 people per second

will we be 9.6 billion people by 2050?
obesity is now more common than underweight worldwide


**age-standardised prevalences (%)**

<table>
<thead>
<tr>
<th>Category</th>
<th>2014</th>
<th>1975</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women underweight</td>
<td>10%</td>
<td>15%</td>
</tr>
<tr>
<td>Women obese</td>
<td>15%</td>
<td>15%</td>
</tr>
<tr>
<td>Men underweight</td>
<td>6%</td>
<td>9%</td>
</tr>
<tr>
<td>Men obese</td>
<td>11%</td>
<td>3%</td>
</tr>
</tbody>
</table>

04/11/2016

massimo cuzzolaro
global trends in BMI


- Adult Men obese %
- Adult Women obese %

1980:
- Adult Men: 5%
- Adult Women: 8%

2008:
- Adult Men: 10%
- Adult Women: 14%
Northern Europe • registered yearly incidence of AN

(Frédérique R Smink et al, Current Psychiatry Reports, 2012)
eating disorders in Europe: incidence (2015-half 2016)
(Anna Keski-Rahkonen & Linda Mustelin, Current Opinion in Psychiatry, 2016)

Anorexia Nervosa
incidence stable

Bulimia Nervosa
incidence declining
Australia • DSM-5 EDs: one-month prevalence

(Karina L Allen et al, 2013)

Australian men and women 20 years old: one-month prevalence %

- men: 2.9
- women: 15.2

Most BN or BED

Mostly OSFED
EDs in Europe: psychiatric comorbidity (2015-half 2016)
(Anna Keski-Rahkonen & Linda Mustelin, Current Opinion in Psychiatry, 2016)

- Anxiety disorders > 50%
- Mood disorders > 40%
- Self-harm > 20%
- Substance use disorders > 10%

**Main risk factors**

- Parental psychiatric disorders
- Prenatal maternal stress
- Various family factors
- Childhood overweight
- Body dissatisfaction in adolescence
obesity ... ED

weight
social stigma

obesity

eating disorders
i disturbi dell’alimentazione nel DSM-5
DSM-5 feeding and eating disorders
(American Psychiatric Association, 2013)

Anorexia Nervosa

Bulimia Nervosa

Binge Eating Disorder

Avoidant/Restrictive Food Intake Disorders

Rumination Disorder

Pica

Other Specified Feeding or Eating Disorders

Unspecified Feeding or Eating Disorders

binge-eating/purging

restricting
DSM-5 • three major eating disorders
(American Psychiatric Association, 2013)

ANr - ANbp
BN
BED
OSFED
atypical anorexia nervosa not underweight
Adolescents with atypical anorexia nervosa have lost significant weight but are not underweight.

They are presenting to pediatric eating disorder services at an increasing rate.

Atypical AN considerably affects physical and psychological functioning, despite adolescents presenting within or above the normal weight range.

The morbidity of adolescents with atypical AN does not appear less severe than that of adolescents with full-threshold AN.
atypical AN not underweight vs. typical AN

increasing rate of inpatients

(*Whitelaw M et al, 2014*)

<table>
<thead>
<tr>
<th>Year</th>
<th>atypical AN</th>
<th>typical AN</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>8%</td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td>47%</td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td>43%</td>
<td></td>
</tr>
</tbody>
</table>

*Figure 1*

Scatter plot of proportion of inpatients who have EDNOS-Wt relative to the number of patients who have EDNOS-Wt or AN by year, along with a line of best fit.
### atypical AN vs. typical AN  •  physical features - a

(Sawyer SM et al, 2016)

<table>
<thead>
<tr>
<th>Feature</th>
<th>atypical AN</th>
<th>typical AN</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>age</td>
<td>15.5</td>
<td>15.4</td>
<td>ns</td>
</tr>
<tr>
<td>female gender</td>
<td>88%</td>
<td>88%</td>
<td>ns</td>
</tr>
<tr>
<td>current BMI</td>
<td>21.4</td>
<td>16.0</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>currently overweight or obese</td>
<td>17%</td>
<td>0%</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>highest premorbid BMI</td>
<td>27.7</td>
<td>20.1</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>overweight or obese in the past</td>
<td>71%</td>
<td>12%</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>loss of weight kg</td>
<td>17.6</td>
<td>11.0</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>age at menarche</td>
<td>11.9</td>
<td>12.4</td>
<td>.05</td>
</tr>
<tr>
<td>amenorrhea</td>
<td>32%</td>
<td>61%</td>
<td>.003</td>
</tr>
</tbody>
</table>
### atypical AN vs. typical AN: Physical Features

*(Sawyer SM et al, 2016)*

<table>
<thead>
<tr>
<th>Feature</th>
<th>atypical AN</th>
<th>typical AN</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bradycardia (&lt; 50 bpm)</td>
<td>24%</td>
<td>33%</td>
<td>ns</td>
</tr>
<tr>
<td>Orthostatic instability (&gt; 20 bpm, &gt; 10 mm Hg)</td>
<td>43%</td>
<td>38%</td>
<td>ns</td>
</tr>
<tr>
<td>Hypothermia (&lt; 35.5°C)</td>
<td>10%</td>
<td>13%</td>
<td>ns</td>
</tr>
<tr>
<td>Admitted to hospital at presentation</td>
<td>41%</td>
<td>52%</td>
<td>ns</td>
</tr>
<tr>
<td>Age at menarche</td>
<td>11.9</td>
<td>12.4</td>
<td>.05</td>
</tr>
<tr>
<td>Amenorrhea</td>
<td>32%</td>
<td>61%</td>
<td>.003</td>
</tr>
</tbody>
</table>

Note: ns indicates not significant.
### atypical AN vs. typical AN ✦ psychological features

*(Sawyer SM *et al*, 2016)*

<table>
<thead>
<tr>
<th></th>
<th>Atypical AN</th>
<th>AN</th>
<th>OR or Mean Difference</th>
<th>(95% CI)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M (SD) or n (%)</td>
<td>(95% CI)</td>
<td>M (SD) or n (%)</td>
<td>(95% CI)</td>
<td></td>
</tr>
<tr>
<td>Compulsive exercise</td>
<td>30 (73%)</td>
<td>(56.1 to 85.3)</td>
<td>68 (59%)</td>
<td>(44.8 to 63.8)</td>
<td>1.93</td>
</tr>
<tr>
<td>Psychiatric comorbidity</td>
<td>16 (38%)</td>
<td>(23.8 to 52.4)</td>
<td>53 (45%)</td>
<td>(36.4 to 53.4)</td>
<td>0.76</td>
</tr>
<tr>
<td>Psychotropic medication</td>
<td>4 (9%)</td>
<td>(2.4 to 19.0)</td>
<td>14 (12%)</td>
<td>(5.9 to 17.8)</td>
<td>0.78</td>
</tr>
<tr>
<td>Self-harm/Suicidal ideation</td>
<td>17 (43%)</td>
<td>(27.5 to 57.5)</td>
<td>45 (39%)</td>
<td>(30.8 to 47.9)</td>
<td>1.14</td>
</tr>
<tr>
<td>Depressive symptoms (CDI)</td>
<td>22.78 (12.17)</td>
<td>(19.03 to 26.94)</td>
<td>18.98 (11.92)</td>
<td>(16.68 to 21.09)</td>
<td>3.78</td>
</tr>
<tr>
<td>Self-Esteem (RSE)</td>
<td>22.24 (7.89)</td>
<td>(19.78 to 24.64)</td>
<td>24.81 (7.38)</td>
<td>(23.40 to 26.40)</td>
<td>-2.57</td>
</tr>
<tr>
<td>Obsessive compulsiveness (CY-BOCS)</td>
<td>6.14 (8.06)</td>
<td>(3.69 to 8.69)</td>
<td>4.12 (7.35)</td>
<td>(2.81 to 5.61)</td>
<td>2.03</td>
</tr>
<tr>
<td>Eating/weight-related obsessive compulsiveness (YBC-EDS)</td>
<td>15.74 (9.10)</td>
<td>(12.57 to 18.80)</td>
<td>13.63 (9.07)</td>
<td>(11.84 to 15.49)</td>
<td>2.11</td>
</tr>
</tbody>
</table>

*P-values calculated for each comparison.*
atypical AN vs. typical AN ✦ EDE

(Sawyer SM et al, 2016)

The weight adolescents with atypical AN are currently at is still higher than the weight they would secretly like to be.

✦

Being overweight or obese before they developed the ED could fuel a "fear of fatness" and perpetuate the disorder itself.
Adolescents with atypical anorexia nervosa have lost significant weight but are not underweight.

They are presenting to pediatric eating disorder services at an increasing rate.

Atypical AN considerably affects physical and psychological functioning, despite adolescents presenting within or above the normal weight range.

The morbidity of adolescents with atypical AN does not appear less severe than that of adolescents with full-threshold AN.
one-year prevalence rates at different levels of care

(Frédérique R Smink et al, Current Psychiatry Reports, 2012)
anorexia nervosa by proxy

(Münchausen by proxy syndrome)
Katz RL, Mazer C, Litt IF

Anorexia nervosa by proxy.

*J Pediatr*
107 (2):247-248, 1985
anorexia nervosa by proxy - a proposal of anorexia nervosa by proxy

Honjo S

A mother's complaints of overeating by her 25-month-old daughter: a proposal of anorexia nervosa by proxy.

*Int J Eat Disord*

a case of a 25-month-old girl brought in by her mother with complaints of overeating.

The mother indicated the patient to have begun overeating before the age of 1 year.
However, the patient was of low height and low body weight, and appeared underfed.

The issue was the mother placing severe restrictions on the child's diet, pathologically afraid of the child overeating.
Sirois F

Anorexie mentale par procuration : une présentation inhabituelle.

La Presse Médicale
The mother seemed to have been suffering from a disorder similar to anorexia nervosa, although not typical. Her fear that her child might eat too much appeared as a projection of the fat phobia characteristic of anorexia nervosa on to her child, which would justify labeling the child's condition anorexia nervosa by proxy.
Women with anorexia nervosa have a reduced fertility but they may have borne children before the onset of their illness or after partial recovery.

Little is known on how to identify the anorexic mothers who underfeed their children and how to manage them.
Eight such mothers were identified as a result of obtaining serial measurement of the children's weights and heights over time.

Nine children (eight boys and one girl) were found to have suffered food deprivation: with severe reduction in weight-for-age in six and in height-for-age in eight.

Five siblings were not affected.
The mechanisms underlying the privation of the children stem from the mother's abnormal concerns with body size, extending to her children.

The children may become unduly accepting of the underfeeding.
It is essential to obtain the confidence of mothers suspected of underfeeding their children and to adopt a whole family approach to treatment. Long-term treatment of one mother, combining family therapy with admissions to hospital, resulted in catch-up growth in her two sons.
purging disorder
Purging Disorder (PurD)

In the final version of the DSM-5, PurD is not listed as a discrete diagnosis but named as part of “other specified feeding or eating disorders” and defined as

- Recurrent purging behaviour to influence weight or shape
- In the absence of binge eating
Limited to our sample the mortality of PurD seems to be

- lower than the mortality reported for AN
- nearly twofold higher than the mortality reported for BN and EDNOS.

In conclusion, our results suggest that patients with behaviours specified with the term PurD should be considered as individuals with serious disordered eating behaviour, who need attention and treatment.
binge eating disorder
The most impactful change was to add BED as a distinct, formal disorder.

The diagnostic criteria note that episodes must occur, on average, at least once a week over three months.
ED prevalence before bariatric surgery
(James Mitchell *et al*, 2015)

<table>
<thead>
<tr>
<th>Eating Disorder</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>BN</td>
<td>2%</td>
</tr>
<tr>
<td>BED</td>
<td>15.7%</td>
</tr>
<tr>
<td>NES</td>
<td>17.7%</td>
</tr>
<tr>
<td>Loss of control eating</td>
<td>43.4%</td>
</tr>
</tbody>
</table>

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Marino JM et al.

The emergence of eating pathology after bariatric surgery: a rare outcome with important clinical implications.

*The International Journal Of Eating Disorders.*

2012;45(2):179-84.

- classical eating disorders: **a rare occurrence**
- eating problems: **far more common**
- it is highly likely that such problems are **underreported**
- **no typology** exists to classify such eating problems
orthorexia nervosa
orthorexia nervosa

orthorexia

a preference for foods that one considers healthy.

orthorexia nervosa

a medical condition in which the sufferer systematically avoids specific foods that they believe to be harmful.
Feeding and eating disorders are characterized by a persistent disturbance of eating or eating-related behavior that results in the altered consumption or absorption of food and that significantly impairs physical health or psychosocial functioning.
Orthorexia nervosa by proxy?

*Eat Weight Disord*
2016

**In July 2016** a 13-month-old child in danger of death was hospitalized in Milan against his parents’ will.
Lab values were alarming and consistent with extreme undernutrition.

The physicians found that the infant’s weight was 5.2 kg, the growth was below the 3rd percentile with serious hypotonia and psychomotor impairment.
An inflexible vegan diet imposed by the parents was reported as the main cause of the problem.

In the last few years newspapers reported several stories similar to the previously examined case.
Veganism in adults requires a well balanced diet including supplements or fortified products. 

As regards infants and toddlers uncontrolled vegan diets may be particularly dangerous.

Composition of breast milk from vegan women, appropriate breast milk substitutes, supplements (e.g., vitamin B-12, vitamin-D, iron, zinc, calcium) and type and amount of dietary fat should be evaluated on a regular basis.
obesità e disturbi dell’alimentazione

differenze e intersezioni
differenze

definizione
classificazione
complicanze mediche
trattamento
... tuttavia ...
There are similarities in phenotype such as:

- excessive attempts at weight control
- binge eating behaviours
- food craving/addiction
- ...
There are similarities in risk factors such as:

- low self-esteem
- external locus of control
- childhood abuse and neglect
- dieting
- media exposure
- body image dissatisfaction
- weight-related teasing
- shared susceptibility genes
Numero di articoli (PubMed) che contengono nel titolo, insieme, le parole Obesity e Eating Disorders

1990-1999: 10 articoli
2000-2009: 50 articoli
2010-2016: 70 articoli

Literature on obesity & eating disorders


alcohol and other drug abuse

eating disorders and obesity

compulsive exercise

pathological gambling

sex addiction

compulsive shopping

... other compulsions
eating and weight disorders (from 1996)
two sides of the same coin?
(Day J et al, 2009)

We believe that this polarisation is fundamentally flawed, and research and treatment of both types of disorder would be better served by greater appreciation of:

- the psychosocial components of obesity
- the biological and genetic components of eating disorders.
The interface between the eating disorders and obesity fields: moving toward a model of shared knowledge and collaboration. (Neumark-Sztainer D, 2009)

The ... recommended model, is one in which the two fields share knowledge to enhance the difficult work of preventing and treating both eating disorders and obesity.
associazioni e/o migrazioni transdiagnostiche

disordered eating behaviour

weight and metabolism dysregulation

eating disorders
A broad spectrum of ...

Weight-related Disorders

or

Non-homeostatic Eating Disorders