

General and Community Psychiatry - 'Anorexia Nervosa is a disorder of the 21st and late 20th centuries and confined to the developed world.'

Introduction.

An eating disorder, such as Anorexia Nervosa (AN) is defined as abnormal feeding habits associated with psychological factors. The International Statistical Classification of Diseases and Related Health Problems, 10th Revision (ICD 10) specifies that a diagnosis of AN can only be made if certain criteria are present. Maintenance of body weight at 15% below that expected or BMI 17.5 or less is essential, and this is achieved by deliberate avoidance of fattening foods, usually with self induced vomiting or excessive exercise. A body image distortion with an intrusive fear of being fat propagates the starvation which eventually leads to an endocrine disorder, manifesting as amenorrhoea in women and loss of libido with impotency in men. If onset is pre-pubertal, secondary sexual changes are delayed or arrested.

Both the incidence and prevalence appeared to increase dramatically in the 1970s, and this seemed to occur only in the developed world, namely North America and Europe^{1,2}. AN was almost unheard of in the developing world until around the 1990s, when research began to emerge describing cases in India, Mexico and Nigeria³. The possibility that the disorder seems to be ever more prevalent in countries as they become more affluent and urban encourages the popular theory that AN may be a disorder of the developed world. If this is indeed the case, as the world becomes increasingly developed, one can only expect an increase of this eating disorder in future years making it necessary to consider public health prevention strategies.

Current epidemiology of anorexia nervosa.

The current estimate of the 12 month prevalence of AN in European people over 19 years is approximately 0.2 – 0.7%⁴, with one population study estimating the mean incidence in the UK at 4 in 100,000 in people aged 10 – 39 years⁵. The eating disorder mainly affects women, 1 in 250 in the UK as opposed to 1 in 2000 men⁶, and in fact the female prevalence of AN in some western countries is reported to be as high as 5.7%⁷. Specific risk factors seem to include high parental expectations, certain personality traits⁸ including a pre-morbid perfectionism and psychiatric conditions including obsessive compulsive disorders and various affective disorders⁹. A recent UK study reported that social classes 1 and 2 are by far the most vulnerable sub-group in society to be affected by AN¹⁰.

The developing world shows different statistics in comparison. In 2004 it was reported that in a cumulative period of 320 years of practice, Kenyan psychiatrists had seen just twenty cases¹¹. One study in an Indian child and adolescent psychiatry unit recorded an overall prevalence of general eating disorders as 1.25%, with only 14.6% of those suffering

from AN¹², and Korean statistics suggest their national prevalence is approximately 0.5% - 1%¹³.

Epidemiology of anorexia nervosa over the last century.

In the early 20th century the number of cases of AN worldwide was relatively few. Long term studies involving northern Europe have shown an increase in AN since the 1950s¹, and during the 1970s the western world reported a huge increase in incidence of the eating disorder (see Figure 1).

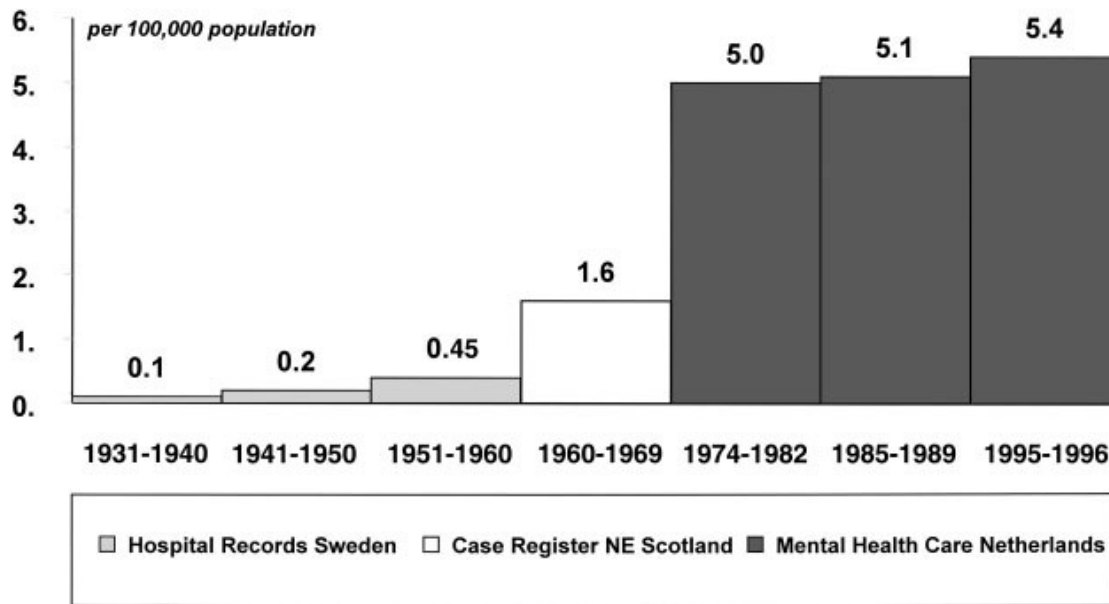


Figure 1: Yearly incidence of anorexia nervosa (AN) in mental health care in Northern Europe in the 20th century¹.

More specifically, in 15-24 year old females in North America, the incidence of this disorder has had a significant linear increase, of approximately 1.03 per 100 000 person years per calendar year, from 1935-1989².

After this surge of new diagnoses in the West, the incidence of AN seems to have reached a plateau (see Figure 1 and Figure 2), a pattern unique to this eating disorder.

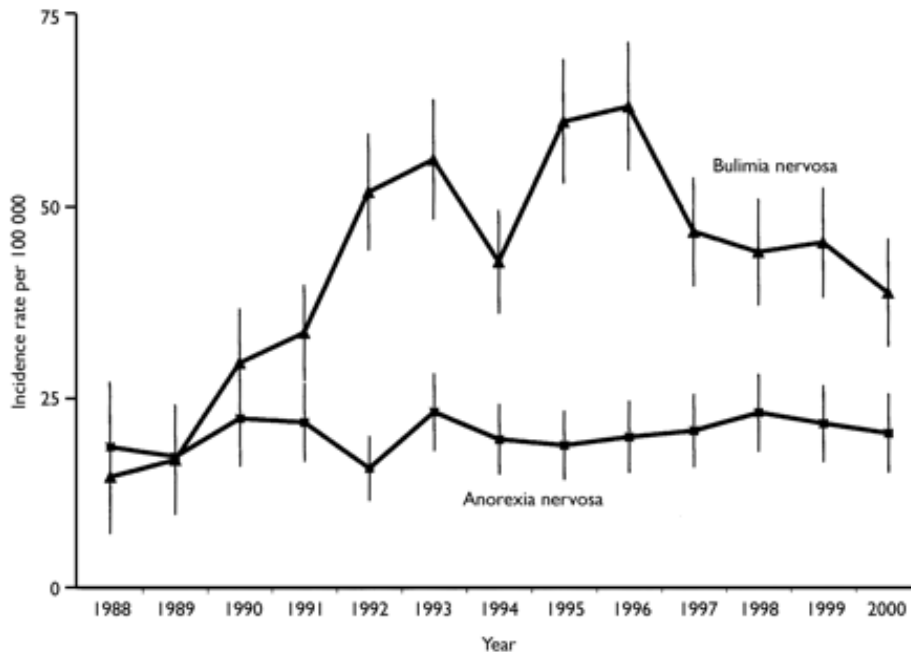


Figure 2: A graph to show U.K. annual incidence of anorexia and bulimia nervosa in women aged 10-39 years from 1988 to 2000 (error bars represent 95% CI)⁵.

The sudden dramatic rise in incidence in the West could debatably reflect improved detection, an increase in interest and hence more scientific research, or a true epidemiological change. It must be noted that the developing countries of the world did not report a similar trend. It was not until the 1990s that other parts of the world experienced an increase of AN cases³.

Until the 1990s AN had barely been reported in developing countries such as Hong Kong, mainland China, South Korea, South Africa, Nigeria, Mexico and India³, and it was only during the latter part of the 20th century that case histories involving AN in these parts of the developing world started to emerge³.

As the western developed world experienced an increase of cases of AN in the 1970s, which was only mirrored in the developing world twenty years later, this suggests that we may see a similar picture of a plateau effect in the next five years.

Anorexia nervosa (AN) – a disorder of the developed world?

Over the 20th century North America and Europe became increasingly developed in terms of industry, lifestyle, transport, employment and education. If AN is shadowing this socioeconomic change there may be a number of possible reasons.

As a mainly female disorder, AN may reflect the changing role of women in a society as it becomes increasingly developed. As gender roles change, and women for the first time gain true independence from the sole role of 'family maker', where plumpness is thought to reflect wealth and fertility, so too may their ideal body image change with it. Certainly it can be said that in the latter part of the 20th century western women began to rival their male counterparts in employment in a way that the developing world is only recently mimicking.

Additionally the modern day pressures of an ideal 'size zero' body image created by the media and fashion industry are mainly aimed at women. Females in Western societies may have increased exposure and therefore vulnerability. This is supported by the fact that in sub-cultures where the demand for thinness is endemic, for example dancers and models, there is a significantly increased risk of eating disorders such as AN¹⁴. Modern pressures to 'look good' seem to propagate such pathological eating habits.

A more general adaptation to a changing society, that spans both genders, may be occurring. Urbanisation of an environment brings with it a change in eating patterns, food choices and meal times for both sexes that may lead to an increase in weight consciousness¹⁵.

Availability of food also alters with urbanisation. After the Second World War and its associated food rationing, perhaps the latter part of the 20th century was the first time that the Western general public had access to an abundance of food. The developing world may only just be experiencing the same luxury. With this change in availability, perhaps an abnormal eating habit could arise as a self protection mechanism against obesity that in some way becomes pathological.

If AN is not solely limited to the Western world, but merely reflects a spread of western influence, perhaps it is more appropriate to describe it as a Western-ised pathology³. Such a hypothesis may be supported by studies involving non-Western immigrants who moved to developed countries in the mid twentieth century, as theoretically they should now display a similar level of vulnerability as native westerners.

As an example, one particular case report describes a black woman who moved from Curacao to the Netherlands when she was 24 years old¹⁶. She described growing up with classic Caribbean values such as 'a woman can almost never be too fat...I didn't know what calories were'. Following her relocation to Northern Europe, she felt under extreme pressure to lose weight, as that was considered attractive in her new environment. At age 30 she was diagnosed with AN¹⁶. Although Curacao had reported some cases of AN since the 1980s, the women who suffered were members of the minority mixed and white population. No cases had previously been seen in the black community¹⁶.

A recent American epidemiological study addressing cross cultural attitudes as a contributing factor to the development of eating disorders found that white females had

less favourable attitudes regarding body image ($p < 0.02$)¹⁷. Until recently African American women were less likely to develop an eating disorder than their white American peers however the statistics are equalising. Women in ethnic minorities are at increased risk of developing AN when exposed to Western values¹⁸ suggesting that socio-cultural differences with respect to body perfection and the ideal shape might be important in the development of an eating disorder.

Although it seems that the majority of cases of AN arise because of an intense fear of being overweight in a society that perceives plumpness as negative, such a morbid self starvation has been reported in cultures that do not value classic western ideals.

A recent Ghanaian study investigated secondary school girls who had been diagnosed with AN and reported that their pathological process did not involve a classic strive for western slimness. It was discovered these girls were exerting an extreme form of control over their lives as a way of achieving perfectionist moral and academic standards¹⁹. This suggests AN occurs in parts of the developing world for reasons that are unrelated to developed western culture.

Whether or not this deliberate self starvation can be called AN is debatable. These girls lacked a morbid fear of fatness which, as mentioned before, is essential for an ICD 10 diagnosis¹⁹. It is possible that the initial onset of AN may not predominantly involve weight limitation. An individual could enjoy the feeling of personal control that deliberate starvation gives them, and once they start to see physical results, this could reward them in a positive reinforcement cycle. The pleasure they get from controlling their weight could result in a fear of putting weight on, and therefore an exaggerated fear of getting fat. If this is the case, the disorder could not be limited to the developed world; the feeling of need for personal control over one's life is universal.

Is anorexia nervosa a disorder purely of the late 20th and 21st centuries?

Although believed by many to be a recent disorder, AN has been recognised for centuries. The first documented report is thought to be as early as the 13th century and one source cites 261 specific cases of self starvation in Europe between 1206 and 1934, with approximately two thirds occurring between the years 1200 and 1600²⁰. This extreme fasting had strong religious links, and women from this time seemed to view slimness with such great esteem that many not only starved themselves to death but were elevated to sainthood.

Following the Renaissance the first alleged medical description of AN was made by Richard Morton in 1689²¹ and at a similar time, 'miraculous maids' deliberately starved themselves and found international fame due to their apparent ability to exist without nourishment²².

There are multiple reports of a disorder resembling AN prior to the 19th century, but the term 'Anorexia Nervosa' was only coined in 1873 by Sir William Gull who described it as a 'perversion of the ego'²³, and it is considered by many to be in fact a relatively recent disorder. The first unequivocally trusted case was reported in 1860 by Marcé who described

'young girls who...become subject to inappetency carried to the utmost limits...these patients arrive at the delirious conviction that they cannot or ought not to eat'²⁴.

Whilst only 261 cases over 700 years seems to highlight the huge increase that occurred in the late 20th century, understanding of science and medicine was limited pre 1900 and psychiatry did not truly exist until the 20th century. There is a lack of data before this time, therefore many cases may have gone undetected or been misunderstood. Poor documentation and scientific research are certain and it may be possible that AN was present at a significant prevalence but poor recognition and understanding meant that it went unrecognised.

Whilst this is true, it is difficult to evaluate the historical accounts regarding their ICD 10 diagnostic criteria for AN. Whilst many of the cases reported before the late 19th century do have a self starvation component, rather than having an intense fear of being fat, the deliberate starvation of individuals discussed pre Victorian era seemed to involve more religious, self control and mortification aspects to it in a similar way to the Ghanaian school girls. It is possible that the religious or self control aspects of the illness would be so overwhelming that to put on weight would be a hugely worrying prospect due to the related loss of control or religious respect.

The fact that AN has been documented numerous times over the last millennium indicates that this eating disorder did not suddenly arise de novo in the 20th and 21st centuries and is not limited to these time periods. However as mentioned previously the global incidence and prevalence have increased exponentially over the last 50 years. Whilst AN has trickled in the background as a rare misunderstood disorder for almost 1000 years, it has apparently boomed in the late 20th century and continued to be a big health concern into the 21st century with no indication of a decline. Whilst technically it cannot be said that AN is confined to the 20th and 21st centuries, taking into account the statistics discussed previously, on one level AN could be viewed as modern eating disorder that has only truly infiltrated society in the last sixty years.

Prevention strategies to reduce the ever increasing prevalence.

As western influence spreads globally, one might expect an increase in the prevalence of AN, hence it seems appropriate to consider measures that could be adopted to reduce these worrying statistics.

If AN is indeed a disorder with a western link, the western ideals that increase vulnerability must be addressed. As mentioned previously the intense pressure from the fashion and media industry promoting a size zero culture in the developed world is known to increase the risk of AN²⁵. Analysis of advertisements in Spanish women's magazines revealed that 22.5% of the advertisements encouraged weight loss either directly or indirectly²⁵. An effective prevention strategy would include censorship of an advertising medium that includes excessive use of 'size zero' models. Action has already been taken of this nature, and larger models are being promoted as curvaceous real women with some consumer groups and fashion industries going as far as banning 'too thin models' with a BMI under 18.

French government officials have proposed a law that makes it illegal to incite extreme thinness. To glamorise the ultra thin may carry fines of up to 45 000 Euros and a three year prison sentence in an attempt to reduce the prevalence of AN²⁶.

However, rather than simply blaming the media, perhaps eating disorders could be regarded as the result of a more complex personal and social issue that could be dealt with by training vulnerable individuals in self determination and control before it becomes pathological²⁷.

As well as national programmes promoting a healthy body image, balanced diet and exercise, prevention should be aimed at individuals also. Reasons for AN to develop vary between a desire to look good in society, a struggle for self control, career, parental influence, and psychiatric conditions. If vulnerable individuals could be picked up early at a pre-morbid state, for example when they present with affective disorders or generally in an educational setting, perhaps specific psycho-education and cognitive behavioural techniques, tailor made for the vulnerable individual could be utilised to prevent the emergence of an eating disorder.

Specific techniques could be adopted according to the identified issue. A recent study showed that AN prevalence is now equal in white and black North Americans, with a significant negative correlation ($p < 0.01$) between desire to be thinner and strong black identity. A successful prevention strategy may include methods to strengthen ethnic identity and encourage traditional cultural values amongst the previously protected minorities¹⁷.

Conclusion.

AN is a disorder that seems to correlate with an increase in affluence, feminist opportunities and modern urbanisation¹⁸. The statistics of AN have reflected the global spread of western values and culture so that countries with previously low incidence and prevalence like Mexico and India are now showing similar epidemiology as North America and Europe. As the prevalence of this eating disorder simultaneously increases as western influence spreads globally, it could be argued that AN is indeed a disorder of the developed

world. The fact that women in ethnic minorities are at increased risk of developing AN when exposed to Western values merely supports this hypothesis. As a result AN has been suggested as a Westernised disorder, but the fact that it has been reported in countries which the infrastructure is distinctly still developing and relatively without western influence, like Ghana, contradicts this idea.

AN can be said to be strongly linked to the developed modern world but it cannot be said to be *confined* to these demographics.

Although reports of AN have existed for hundreds of years, pre 1950s statistics showed that the global prevalence was relatively negligible. Only in the late 20th and 21st centuries did the epidemiology show a huge increase in numbers of cases, first in the West and then 20 years later in more developing countries. Whilst one cannot state that AN is purely a disorder limited to recent years, such a dramatic rise in not only incidence and prevalence, but also awareness means that it may be appropriately classes as a modern day disorder mainly limited to the 20th and 21st centuries.

As developing countries are showing increased prevalence of AN measures to reduce the disorder are needed. Cure rates are poor²⁷, therefore prevention strategies focusing on reducing negative media influences whilst simultaneously promoting cognitive self help for vulnerable individuals should be adopted.

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