Risk factors and clinical correlates in eating disorders

Katarina Gunnard

KATARINA GUNNARD

RISK FACTORS AND CLINICAL CORRELATES IN EATING DISORDERS

Faculty of Medicine

EHEA doctoral program: Medicine

RISK FACTORS AND CLINICAL CORRELATES IN EATING DISORDERS

Dissertation

To obtain the degree of Doctor in Medicine (European title) by the University of Barcelona

PHD Candidate:

Katarina Gunnard

Director:

Dr. Fernando Fernández-Aranda

Barcelona, 2012

"When someone seeks," said Siddhartha, "then it easily happens that his eyes see only the thing that he seeks, and he is able to find nothing, to take in nothing because he always thinks only about the thing he is seeking, because he has one goal, because he is obsessed with his goal. Seeking means: having a goal. But finding means: being free, being open, having no goal."

HERMAN HESSE

To my family,

Att flytta hem

Svenskar som hört att jag flyttat från Finistere frågar om jag har flyttar hem.
>>Har du flyttat hem?<<
Och jag får mitt vanliga problem med ***hem.***
Det är ju sig själv man flyttar och alltså flyttar hem till.
Fast på en annan plats.

BODIL MALMSTEN

Hemma för mig är när vi är tillsammans. Ni är min lycka, mitt stöd och mina bästa vänner. Jag älskar er.

ACKNOWLEDGEMENTS

For financial support I am indebted to the following institutions:

1.) **Agència de Gestió d'Ajuts Universitaris i de Recerca (AGAUR)** for a 4 year studentship for predoctoral studies from the Catalan government (2008 FI_A370)

2.) **CIBER de Fisiopatología de la Obesidad y la Nutrición (CIBERobn)** for a foreign studentship for a 2-month placement at the King's College, London, Institute of Psychiatry with Prof. Janet Treasure.

For collaboration and data sharing I would like to thank:

1. **Universidad Autonoma de Barcelona**
2. **CIBERobn CIBER de Fisiopatología de la Obesidad y la Nutrición**

3. **5th Framework Programme on Healthy Eating**

a.) **King's College London**

b.) **Medical University of Vienna**

c.) **University of Florence**

d.) **Fondazione Centro S. Raffaele del Monte Tabor**

e.) **University Medical Centre Ljubljana**

ACKNOWLEDGEMENTS CONTINUED

I would like to thank my director Dr. Fernando Fernandez-Aranda for enabling me to carry out this European MD and being my teacher, inspiration, mentor and most of all friend.

I would also like to thank the research team and my colleagues at the University Hospital of Bellvitge, especially Dr. Susana Jiménez-Murcia, Dr. Jose Manuel Menchón, Isabel Krug, Juanjo Santamaría, Zaida Agüera, Laura Forcano, Antonio Soto, Cynthia Villarejo, Carolina Sancho, Nadine Riesco and Isabel Sanchez.

I couldn't have done my thesis without Eva Peñas, Eva Penelo and Roser Granero. I am so grateful for all the help you have given me and that I have had the pleasure to work with you.

I want to thank Janet Treasure for a very memorable time at the Institute of Psychiatry, King's College in London, and Ronnie Salo and team for my short-stay at Stockholms Centrum for Ätstörningar in Stockholm.

Finally, I would like to thank my friends and family. You rock my world.

TABLE OF CONTENTS

Table of contents

TABLES

FIGURES

ABBREVIATIONS

AN = Anorexia Nervosa

APA = American Psychiatric Association

ANBN = Anorexia Nervosa with Binge Eating

AN-BP = Anorexia Binge-Purging subtype

AN-CROSS = Anorexia Nervosa who cross over to Bulimia Nervosa

AN-R = Anorexia-Nervosa Restrictive subtype

AN-P = Anorexia-Nervosa Purging subtype

AUD = Alcohol Use Disorder

AUDs = Alcohol Use Disorders

BED = Binge Eating Disorder

BN = Bulimia Nervosa

BN-P = Bulimia Nervosa Purging Subtype

BN-NP = Bulimia Nervosa Non Purging Subtype

CAT = Cognitive Analytic Therapy

CBT = Cognitive Behaviour Therapy

CIA + Childhood Interpersonal Adversity

DSM-IV = Diagnostic and Statistical Manual of Mental Disorders

DT = Drive for Thinness

DU= Drug Use

EAT = Eating Attitudes Test

ED = Eating Disorder

EDs = Eating Disorders

EDI = Eating Disorder Inventory

EDNOS = Eating Disorders Not Otherwise Specified

ICD = Impulse Control Disorder

IF = Global Impact Factor

LD = Low Density

MDD = Major Depressive Disorder

OCD = Obsessive Compulsive Disorder

PD = Personality Disorder

PDs = Personality Disorders

SCPAS = Social Comparison through Physical Appearance Scale

STAXI-2= State Trait Anger Inventory-2

SU = Substance Use

SUD = Substance Use Disorder

TCA = Trastorno de la Conducta Alimentaria

PREFACE

This dissertation, presented to obtain the degree of Doctor in Medicine by the University of Barcelona, is the result of 3 studies carried out during a 4-year period at the Eating Disorder Unit (Department of Psychiatry) of the University Hospital of Bellvitge and the Department of Medicine at the University of Barcelona. The following articles have been published in international journals, as a result of the work performed, with a global impact factor (IF) of **10.351** (ISI-knowledge, JRC 2011) for the papers used for the present thesis and an IF of **12.848** for all the papers in which I collaborated.

Peñas-Lledó, E., Fernández-Aranda, F., Jiménez-Murcia, S., Granero, R., Penelo, E., Soto, A., **Gunnard, K.**, & Menchón, JM. (2009). Subtyping eating disordered patients along drive for thinness and depression. Behaviour Research and Therapy, 47(6), 513-9.

Gunnard, K.,; Krug, I., Jiménez-Murcia, S., Penelo, E., Granero, R., Treasure, J. Tchanturia, K., Collier, D., Menchón, JM., & Fernández-Aranda, F. (2011). Relevance of social and self-expectations in Eating Disorders. European Eating Disorders Review. doi: 10.1002/erv.1148.

Studies currently under review (minor changes):

Peñas-Lledó, E., Agüera, Z., Jiménez-Murcia, S., Gunnard, K. and Fernández-Aranda, F. (2012). Differences in Cognitive Behavioral Treatment dropout rates between Bulimia Nervosa subtypes based on Drive for Thinness and Depression. Research Letter for *Psychotherapy & Psychosomatics.*

Studies where I have collaborated but which will NOT to be included in the thesis:

Forcano, L., Santamaría, J., Agüera, Z., **Gunnard, K.**, Tchanturia, K., Treasure, J., Granero, R., Jiménez-Murcia, S., & Fernández-Aranda, F. (2008). Eating symptomatology and psychopathology among patients with Bulimia nervosa: Comparison between Spanish native-born and Latin-American immigrants. International Journal of Child and Adolescent Health, 1 (4), 365-372.

Gómez-Peña M., Penelo E., Granero R., Fernández-Aranda F., Álvarez-Moya E., Santamaría J., Moragas L., Aymamí, MN., Bueno, B., **Gunnard, K.,** Menchón, JM., & Susana Jiménez-Murcia (2010). Motivation to change and pathological gambling: Analysis of the relationship with clinical and psychopathological variables. British Journal of Clinical Psycholy., 50 (2): 196-210. DOI:10.1348/014466510X511006

Santamaría, J., Soto, A., Fernandez-Aranda, F., Krug, I., Forcano, L., **Gunnard, K.,** Kalapanidas, E., Lam, T., Raguin, T., Davarakis, C., Menchón, JM., & Jiménez-Murcia,S. (2011). Serious Games as additional Psychological Support: A review of the literature. Journal of Cybertherapy and Rehabilitation, 4 (4), 469-476.

Jimenez-Murcia, S., Aymami, MN., Gomez-Peña, M., Santamaria, J., Alvarez-Moya E., Fernandez-Aranda, F., Granero, R., Penelo, E., Bueno, B., Moragas, L., **Gunnard, K.,** & Menchón, JM (2012). Does Exposure and Response Prevention Improve the Results of Group Cognitive-Behavioural Therapy for Male Slot Machine Pathological Gamblers? British Journal of Clinical Psychology, 51 (1): 54-71. DOI:10.1111/j.2044-8260.2011.02012.x

Fernando Fernandez-Aranda, Susana Jimenez-Murcia, Juan J. Santamaria, **Katarina Gunnard**, Antonio Soto, Elias Kalapanidas, Richar G. Bults, Costas Davarakis , Todor Ganchev, Roser Granero, Dimitri Konstantas, Theodoros P. Kostoulas, Tony Lam, Mikkel Lucas, Cristina Masuet-Aumatell, Maher H Moussa, Jeppe Nielsen, Eva Penelo (2012). Video games as a complementary tool in mental disorders: Playmancer a European multicenter study. Journal of Mental Health. (in press). DOI: 10.3109/09638237.2012.664302

Aymamí, MN., Granero, R., Penelo, E., Fernández-Aranda,F., Krug, I., **Gunnard, K.** , Santamaría, J., Bueno, B., Jaurrieta, N., Gómez Peña, M., Álvarez-Moya, E., Menchón, JM. & Jiménez-Murcia, S. (submitted). Anger in Pathological gambling: clinical, psychopathological and personality correlates. *Psychological Reports*.

Jiménez-Murcia, S., Penelo, E., Granero, R., Fernández-Aranda, F., Stinchfield, R., Aymamí, MN., Gómez-Peña, M., **Gunnard, K.,** Soto, A., Nasarre, M. & Menchón, JM.

(submitted) Gender and Responsible Gambling: The SGQW a new screening instrument.

1. INTRODUCTION

Eating Disorders (EDs) are some of the most common mental disorders of the last decades (Rojo et al., 2003) and among the most life threatening ones with a mortality rate that may be as high as 15% in some cases, including deaths from arrhythmia, gastric hemorrhaging, and suicide (Sobel, 1996). They are characterized by disordered eating, dangerous weight control behaviours and thoughts (Weiselberg, Gonzalez, & Fisher, 2011) that often start after or during adolescents (C. G. Fairburn & Harrison, 2003). The altered behaviour regarding eating and weight lead to physical as well as psycho-social problems. Currently, the ED classifications, according to the DSM-IV-TR include the diagnoses Anorexia Nervosa (AN), Bulimia Nervosa (BN) and Eating Disorders Not Otherwise Specified (EDNOS) to which the group Binge Eating Disorder (BED) belongs. Obesity is not classified as an ED even if it involves a higher risk of mortality (Bulik, Sullivan, & Kendler, 2002; Jacquemont et al., 2011).

EDs present high lifetime and current comorbidity with Major Depression (MDD) (Penas-Lledo et al., 2009) (F. Fernandez-Aranda, Pinheiro et al., 2007) Obsessive-Compulsive Disorders (OCD) (Jimenez-Murcia et al., 2007), Anxiety Disorders (Bulik, Sullivan, Carter, & Joyce, 1997; Penelo et al., 2010), Substance-Use Disorders (SUD) (Calero-Elvira et al., 2009; Krug et al., 2009; Krug et al., 2008; Root, Pinheiro et al., 2012) Impulse Control Disorders (ICD) (F. Fernandez-Aranda et al., 2006; F. Fernandez-Aranda et al., 2008) and Personality Disorders (Aguera et al., 2012; Lilenfeld, Wonderlich, Riso, Crosby, & Mitchell, 2006).

The nature/nurture debate has long been discussed in the ED literature and to what extent that EDs can be explained by environmental factors such as family (Lilenfeld et al., 1998; Strober, Freeman, Lampert, & Diamond, 2007) or genetic factors (Root et al., 2011; Root et al., 2010; Treasure, Cardi, & Kan, 2012). There is also a debate as of whether non-shared or shared environmental factors are more important in the development of an ED (F. Fernandez-Aranda, Krug et al., 2007; C. Jacobi, Hayward, de Zwaan, Kraemer, & Agras, 2004). Regarding socio-demographical features, some of the

most relevant risk factors for developing an ED are the following; female, adolescent and living in the Western World (C. G. Fairburn & Harrison, 2003).

2. EPIDEMOLOGY

During the 20th century EDs went from being barely known to a major public health problem; psychiatric disorders with high co-morbidity and mortality rates (Schmidt, 2005). In fact, AN has the highest mortality rate of all mental disorders (Hoek, 2006) (C. G. Fairburn & Harrison, 2003). The **prevalence** of AN has been stable since the 1970's, however, there is a current debate of whether the incidence of AN is increasing (Hoek, 2006). The prevalence of BN has arisen dramatically since its first description by Russell in 1979 (Russell, 1979). There are no clear answers as to why the cases of BN have increased to such an extent; although the disorder is thought of as having more socio-cultural underlying factors and perhaps certain pressures in the 1980's caused the disorder's rise (Palmer, 2008). Over the last 10 years, the prevalence of lifetime obesity in ED cases has increased threefold to 28.8 % (Villarejo et al., 2012). Currently, the prevalence rate for AN is 0.3% and 1.0% for BN in young females between 15-24 years of age (Hoek, 2006) and the incidence rate for AN and BN in the general population is 8 out of 100, 000 per year and 12 out of 100, 000 per year, respectively (Schmidt, 2005). Rojo (2003) found the prevalence rate in Spain to be 2.33% in girls and 0.44% in boys (Rojo et al., 2003). The male rate of ED is estimated to be 5-10% of the rate in females (Nunez-Navarro et al., 2012; Schmidt, 2005). AN is most common in white young girls (Hoek, 2006) and the age of onset most often follows puberty (Schmidt, 2005). Puberty is challenging time both in terms of psychosocial aspects as well as physical changes. Young girls between 11-13 years of age have their body weight increased with 40% and their body fat with 14% (Schmidt, 2005). The most common age to suffer an ED is between 15-35 years (Palmer, 2008). This is in line with other mental disorders which also tend to develop in adolescence or in the early 20's - 30's (such as anxiety, affective, bipolar disorder and substance use disorder) (Kessler et al., 2007).

However, it should be noted that much data is based on questionnaires and conducted on local levels and that percentages may differ greatly between countries and cultures.

3. CLINICAL FEATURES, CLASSIFICATION AND DIAGNOSES

3.1 Anorexia Nervosa

The diagnostic criteria for AN are depicted in table 1 (APA, 2000). AN-R is currently considered a distinct phenotype (Schmidt, 2005). The symptoms included in the disorder are amongst others a resistance to maintain a normal body weight or healthy BMI because of a deep fear of gaining weight or becoming fat. A very low weight is achieved through severe food restriction (with foods viewed as fattening being excluded) and other weight-control behaviours such as excessive exercise and/or self-induced vomiting and laxative use (C. G. Fairburn & Harrison, 2003). AN often also involve a body image distortion and amenorrhea. AN, like all other types of ED, is curable however not all affected fully recover and for some the illness turns chronic. The mortality rate in AN is 0.56 per year (Bulik et al., 2008) and the prevalence of suicide attempts in AN-R and AN-P 8.65% and 25.5% respectively (Forcano et al., 2011).

Table 1: *DSM-IV-TR diagnostic criteria for Anorexia Nervosa*

A. Refusal to maintain body weight at or above a minimally normal weight for age and height (e.g., weight loss leading to maintenance of body weight less than 85% of that expected; or failure to make expected weight gain during period of growth, leading to body weight less than 85% of that expected).

B. Intense fear of gaining weight or becoming fat, even though underweight.

C. Disturbance in the way in which one's body weight or shape is experienced, undue influence of body weight or shape on self-evaluation, or denial of the seriousness of the current low body weight.

D. In postmenarcheal females, amenorrhea, i.e., the absence of at least three menstrual cycles. (A woman is considered to have amenorrhea if her periods occur only following hormone, e.g., estrogen, administration.)

Specify type:

Restricting Type: during the current episodes of Anorexia Nervosa, the person has not regularly engaged in binge-eating or purging behavior (i.e., self-induced vomiting or the

misuse of laxatives, diuretics, or enemas)

Binge-Eating/Purging Type: during the current episode of Anorexia Nervosa, the person has regularly engaged in binge-eating or purging behaviour (i.e., self-induced vomiting or the misuse of laxatives, diuretics, or enemas)

In February 2010, the DSM-V development was launched and proposed revisions are currently under review. The proposed revision for AN is the following **(with criteria for clarity reworded and the requirement for amenorrhea eliminated):**

Table 2: *Proposed new criteria for AN in DSM-5*

Anorexia Nervosa

A. Restriction of energy intake relative to requirements leading to a significantly low body weight in the context of age, sex, developmental trajectory, and physical health. Significantly low weight is defined as a weight that is less than minimally normal, or, for children and adolescents, less than that minimally expected.

B. Intense fear of gaining weight or becoming fat, or persistent behavior that interferes with weight gain, even though at a significantly low weight.

C. Disturbance in the way in which one's body weight or shape is experienced, undue influence of body weight or shape on self-evaluation, or persistent lack of recognition of the seriousness of the current low body weight.

Specify current type:

Restricting Type: during the last three months, the person has not engaged in recurrent episodes of binge eating or purging behavior (i.e., self-induced vomiting or the misuse of laxatives, diuretics, or enemas)

Binge-Eating/Purging Type: during the last three months, the person has engaged in recurrent episodes of binge eating or purging behavior (i.e., self-induced vomiting or the misuse of laxatives, diuretics, or enemas)

3.2 Bulimia Nervosa

Just like AN, BN has an early onset, nevertheless, a poorer prognosis of full recovery. Perhaps the explanation as to why is socially bound; it is less visible to live with chronic BN then AN (Day et al.). According to the National Institute of Mental Health (NIMH, 2011), 1.1 to 4.2% of females in the United States have BN in their lifetime. This percentage is probably under estimated due to the fact that many people with BN never seek treatment. What distinguishes BN from AN are binge episodes during food restriction. A binge implies a food intake around 1000-2000 calories during a short period of time and a sensation of loss of control (APA, 2000). The binge eating present in BN, causes people with BN to maintain a body weight within the normal BMI range or over in some cases (C. G. Fairburn & Harrison, 2003). People with BN often binge and purge in secrecy and experiences more disgust and shame than people with AN (NIMH, 2011). The lifetime prevalence of suicide attempts is 26.9% (Forcano et al., 2009). The diagnostic criteria (APA, 2000) for BN are presented in table 3.

Table 3: *DSM-IV-TR diagnostic criteria for Bulimia Nervosa*

A. Recurrent episodes of binge eating. An episode of binge eating is characterized by both of the following:

(1) eating, in a discrete period of time (e.g., within any 2-hour period), an amount of food that is definitely larger than most people would eat during similar period of time and under similar circumstances.

(2) A sense of lack of control over eating during the episode (e.g., feeling that one cannot stop eating or control what or how much one is eating)

B. Recurrent inappropriate compensatory behavior in order to prevent weight gain, such as self-induced vomiting; misuse of laxatives, diuretics, enemas, or other medications; fasting; or excessive exercise.

C. The binge eating and inappropriate compensatory behaviors both occur, on average, at least twice a week for 3 months.

D. Self-evaluation is unduly influenced by body shape and weight.

E. The disturbance does not occur exclusively during episodes of Anorexia Nervosa.

Specify type:

Purging Type: during the current episode of Bulimia Nervosa, the person has regularly engaged in self-induced vomiting or the misuse of laxatives, diuretics, or enemas

Nonpurging Type: during the current episode of Bulimia Nervosa, the person has used

other inappropriate compensatory behaviors, such as fasting or excessive exercise, but has not regularly engaged in self-induced vomiting or the misuse of laxatives, diuretics, or enemas

The proposed revision of BN for DSM-5 is the following **(with reduced requirement for binge/purge frequency)**:

Table 4: *Proposed new criteria for BN in DSM-5*

Bulimia nervosa

A. Recurrent episodes of binge eating. An episode of binge eating is characterized by both of the following:

(1) Eating, in a discrete period of time (for example, within any 2-hour period), an amount of food that is definitely larger than most people would eat during a similar period of time and under similar circumstances.

(2) A sense of lack of control over eating during the episode (for example, a feeling that one cannot stop eating or control what or how much one is eating).

B. Recurrent inappropriate compensatory behavior in order to prevent weight gain, such as self-induced vomiting; misuse of laxatives, diuretics, or other medications, fasting; or excessive exercise.

C. The binge eating and inappropriate compensatory behaviors both occur, on average, at least once a week for 3 months.

D. Self-evaluation is unduly influenced by body shape and weight.

E. The disturbance does not occur exclusively during episodes of anorexia nervosa.

3.3 Eating Disorder Not Otherwise Specified

EDNOS is the most prevalent ED at the moment (Dalle Grave & Calugi, 2007; Machado, Machado, Goncalves, & Hoek, 2007; Mancilla-Diaz et al., 2007). What was thought of as a small group of outliers a decade ago, now accounts for 60% of all ED cases. An ED is classified as EDNOS when a person presents symptomatology of either AN or BN but does not present enough criteria for it to be diagnosed as such. Moreover, many patients who have previously suffered from either AN or BN are likely to later be diagnosed with EDNOS (C. G. Fairburn & Harrison, 2003). The case can also be vice versa, that someone is diagnosed with EDNOS but later is diagnosed with

AN or BN when the symptomatology is enhanced in terms of either purging behaviour (in the case of BN) or low body weight and amenorrhea (in the case of AN). In fact, there are no diagnostic criteria for EDNOS, in fact it is a category for EDs that do not meet the specific criteria for any ED. The examples included are presented in table 5.

Table 5: *Examples of criteria for EDNOS in DSM-IV-TR*

1. For females, all of the criteria for Anorexia Nervosa are met except that the individual has regular menses.
2. All of the criteria for Anorexia Nervosa are met except that, despite significant weight loss, the individual's current weight is in the normal range.
3. All of the criteria for Bulimia Nervosa are met except that the binge eating and inappropriate compensatory mechanisms occur at a frequency of less than twice a week or for a duration of less than 3 months.
4. The regular use of inappropriate compensatory behavior by an individual of normal body weight after eating small amounts of food (e.g., self-induced vomiting after the consumption of two cookies).
5. Repeatedly chewing and spitting out, but not swallowing, large amounts of food.
6. Binge-eating disorder: recurrent episodes of binge eating in the absence of the regular use of inappropriate compensatory behaviors characteristic of Bulimia Nervosa.

Enormous changes for category EDNOS are under review for the upcoming DSM-V. The criteria for EDNOS is being modified and replaced into a section termed Feeding and Eating Conditions Not Elsewhere Classified. Brief descriptions of several conditions of potential clinical significance are provided so that the problems of individuals with feeding or eating problems not meeting criteria for currently recognized disorders can be more appropriately described and categorized.

The new conditions will apply to cases that do not meet any of the criteria for any Feeding or Eating Disorder. The Conditions are currently still under review and more detailed criteria is necessary for each condition. It is pointed out that the conditions are not designated disorders; however, they may require equally intensive clinical intervention.

The proposed **Feeding and Eating Conditions Not Elsewhere Classified** are the following:

Table 6: *Proposed revision of Feeding and Eating Conditions Not Elsewhere Classified*

Atypical Anorexia Nervosa

All of the criteria for Anorexia Nervosa are met, except that, despite significant weight loss, the individual's weight is within or above the normal range.

Subthreshold Bulimia Nervosa (low frequency or limited duration)

All of the criteria for Bulimia Nervosa are met, except that the binge eating and inappropriate compensatory behaviors occur, on average, less than once a week and/or for less than for 3 months.

Subthreshold Binge Eating Disorder (low frequency or limited duration)

All of the criteria for Binge Eating Disorder are met, except that the binge eating occurs, on average, less than once a week and/or for less than for 3 months.

Purging Disorder

Recurrent purging behavior to influence weight or shape, such as self-induced vomiting, misuse of laxatives, diuretics, or other medications, in the absence of binge eating. Self-evaluation is unduly influenced by body shape or weight or there is an intense fear of gaining weight or becoming fat.

Night Eating Syndrome

Recurrent episodes of night eating, as manifested by eating after awakening from sleep or excessive food consumption after the evening meal. There is awareness and recall of the eating. The night eating is not better accounted for by external influences such as changes in the individual's sleep/wake cycle or by local social norms. The night eating is associated with significant distress and/or impairment in functioning. The disordered pattern of eating is not better accounted for by Binge Eating Disorder, another psychiatric disorder, substance abuse or dependence, a general medical disorder, or an effect of medication.

Other Feeding or Eating Condition Not Elsewhere Classified

This is a residual category for clinically significant problems meeting the definition of a Feeding or Eating Disorder but not satisfying the criteria for any other Disorder or Condition.

3.4 Binge Eating Disorder

BED is categorized as part of the EDNOS category in the DM-IV-TR (APA, 2000), however, in the new edition DSM-V (Becker, Eddy, & Perloe, 2009; de Zwaan & Herzog, 2011) it will be diagnosed as a psychiatric disorder. The disorder involves binge eating, considered on the same criteria as BN, but no purging behaviour such as vomits, laxative or diuretics use. 2-5 % of the US general population is thought to have BED in their lifetime (NIMH, 2011). It should be question whether this number is higher in the US than Europe (de Zwaan & Friederich, 2006; Striegel-Moore & Franko, 2003). The diagnostic criteria in the Appendix of DSM-IV-TR (APA, 2000) are stated below in table 7.

Table 7: *Appendix for Binge Eating in DSM-IV-TR*

A. Recurrent episodes of binge eating. An episode of binge eating is characterized by both of the following:
1. eating, in a discrete period of time (for example, within any 2-hour period), an amount of food that is definitely larger than most people would eat in a similar period of time under similar circumstances.
2. a sense of lack of control over eating during the episode (for example, a feeling that one cannot stop eating or control what or how much one is eating)
B. The binge-eating episodes are associated with three (or more) of the following:
1. eating much more rapidly than normal
2. eating until feeling uncomfortably full
3. eating large amounts of food when not feeling physically hungry
4. eating alone because of feeling embarrassed by how much one is eating
5. feeling disgusted with oneself, depressed, or very guilty afterwards
C. Marked distress regarding binge eating is present.
D. The binge eating occurs, on average, at least once a week for three months.
E. The binge eating is not associated with the recurrent use of inappropriate compensatory behavior (for example, purging) and does not occur exclusively during the course Anorexia Nervosa, Bulimia Nervosa or Avoidant/Restrictive Food Intake Disorder.

The proposed revision for the new DSM edition DSM-5 is the following:

Table 8: *Proposed diagnostic criteria for BED in DSM-5*

Binge Eating Disorder

A. Recurrent episodes of binge eating. An episode of binge eating is characterized by both of the following:

1. eating, in a discrete period of time (for example, within any 2-hour period), an amount of food that is definitely larger than most people would eat in a similar period of time under similar circumstances

2. a sense of lack of control over eating during the episode (for example, a feeling that one cannot stop eating or control what or how much one is eating)

B. The binge-eating episodes are associated with three (or more) of the following:

1. eating much more rapidly than normal

2. eating until feeling uncomfortably full

3. eating large amounts of food when not feeling physically hungry

4. eating alone because of feeling embarrassed by how much one is eating

5. feeling disgusted with oneself, depressed, or very guilty afterwards

C. Marked distress regarding binge eating is present.

D. The binge eating occurs, on average, at least once a week for three months.

E. The binge eating is not associated with the recurrent use of inappropriate compensatory behavior (for example, purging) and does not occur exclusively during the course Anorexia Nervosa, Bulimia Nervosa, or Avoidant/Restrictive Food Intake Disorder.

After the description of DSM-ED diagnoses, an additional note should be made on the changes awaiting the edition of DSM-V. The new overall classification, replacing the chapter Eating Disorders in DSM-IV, is now called Feeding and Eating Disorders. The new diagnoses are the following: Pica, Rumination Disorder, Avoidant/Restrictive Food Intake Disorder, Anorexia Nervosa, Bulimia Nervosa, Binge Eating Disorder, Other Specified Feeding or Eating Disorder and Unspecified Feeding or Eating Disorder.

The main changes lie in renaming the Eating Disorder Not Otherwise Specified (EDNOS) to Feeding and Eating Conditions Not Elsewhere Classified) and adding descriptions of several conditions of potential clinical significance into the category. Moreover, BED is recognized as a free-standing diagnosis.

3.5 Diagnostic crossover

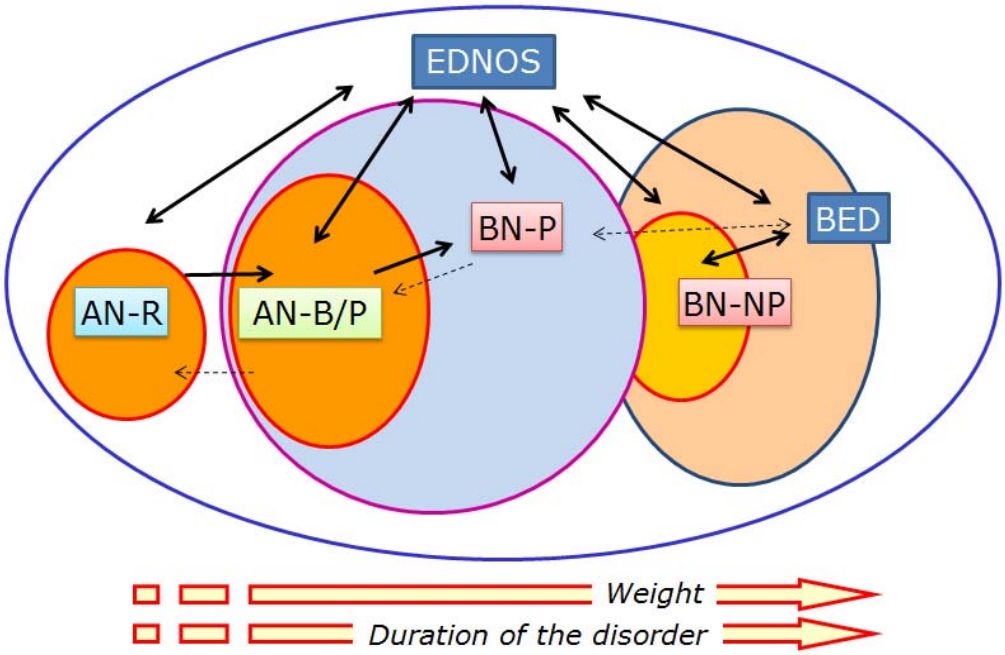
The ED phenotype shares certain traits with other disorders such as obsessive-compulsive disorder (M. B. Anderluh, Tchanturia, Rabe-Hesketh, & Treasure, 2003), anxiety (Penas-Lledo et al., 2010) and affective disorders (Stice et al., 2001). Perfectionism and rigidity are traits present in childhood in two-thirds of AN and one-third of BN patients respectively. This shows that diagnostic categories as presented in the DSM-IV do not fully correspond to underlying biological factors (Castellini et al., 2011). Anderluh et al. (2003) (M. B. Anderluh, Tchanturia, Rabe-Hesketh, & Treasure, 2003) suggest that in order to specify phenotypes, Axis I and II dimensions should be applied respectively. The restricting subtype of AN is typically linked to the personality trait perfectionism (C.G. Fairburn, Cooper, Doll, & Welch, 1999), while BN is often linked with impulsive personality traits (F. Fernandez-Aranda et al., 2006; F. Fernandez-Aranda et al., 2008).

On another note, 50% of AN patients go on to develop BN, around 30% of individuals with BN had previously presented a history of AN and yet another 30% had suffered from obesity in the past (M. Anderluh, Tchanturia, Rabe-Hesketh, Collier, & Treasure, 2009). This temporal movement indicates that all ED subtypes share common features (C. G. Fairburn & Harrison, 2003).

3.6 The controversy around diagnosing subtypes of Eating Disorders

The status of sub-threshold disorders is highly debated. Several studies have shown that sub-threshold disorders may cause the same amount of impairment and disability as threshold disorders, while other report sub-threshold disorders to be progressions into AN and BN (Preti et al., 2009). The diagnostic criteria for AN and BN is very narrow and if all of the criteria is not fulfilled the diagnosis will be EDNOS (APA, 2000). Many patients nowadays fall under the diagnosis EDNOS and it can be questioned whether a change in diagnosing ED is necessary (Keel, Brown, Holm-Denoma, & Bodell, 2011). EDNOS is originally a categorical group for ED outliers and it there is currently an ongoing debate on whether EDNOS should be classified as a categorical group for all ED subtypes not fulfilling other ED criteria or whether EDs should be viewed as a continuum ranging extreme restriction and control to binging/purging and extreme impulsivity where cases of EDNOS spread differently along the continuum. Palmer (Palmer, 2008) suggest AN and BN to be two ends of a range of possible consequences of extreme weight, shape and diet concern on such a continuum (Dalle Grave & Calugi, 2007). As a matter of fact, nowadays EDNOS accounts for 77.4 % of all community cases with ED and 60% in outpatients (Machado, Machado, Goncalves, & Hoek, 2007) and hence questions the current diagnostic classification criteria in DSM-IV-TR. The category EDNOS was originally created as a category for the cases that didn't fulfill the criteria for either AN or BN. Rather than being a category for ED outliers, it is now the most common ED both clinically and in the general population.

Figure 1: *Current ED diagnoses distribution according to DSM-IV-TR and diagnostic crossover (APA, 2000)*



BN have greater symptomatology in terms of binging, purging and vomiting in comparison to EDNOS. It has been argued that EDNOS is an early stage or "lighter form" of BN. The matter does not seem as clear cut because even though the symptomatology is less severe in EDNOS, the two disorders have similar levels of attitudinal symptoms and comorbidity with affective disorders (Schmidt et al., 2008).

4. CLINICAL CORRELATES AND COMORBIDITY IN EATING DISORDERS

One third of the general population is affected with a mental disorder during their (Preti et al., 2009). Women have higher prevalence of mental disorders than men and EDs is one of them (F. Jacobi et al., 2004). Women are 8-13 times more likely to develop an ED, in comparison to men (below 1.0 out of 100 000) (Hoek, 2006). The only exception is substance use disorders, especially alcohol abuse, which affects more men (F. Jacobi et al., 2004). Women are also more likely to suffer from co-morbid mental disorders.

ED are unstable in the diagnosis in the sense that there may be overlapping between them and even conversion from one type of ED to another. There is also frequently comorbidity with other mental disorders, such as anxiety and depression (Collier & Treasure, 2004; Milos, Spindler, & Schnyder, 2004).

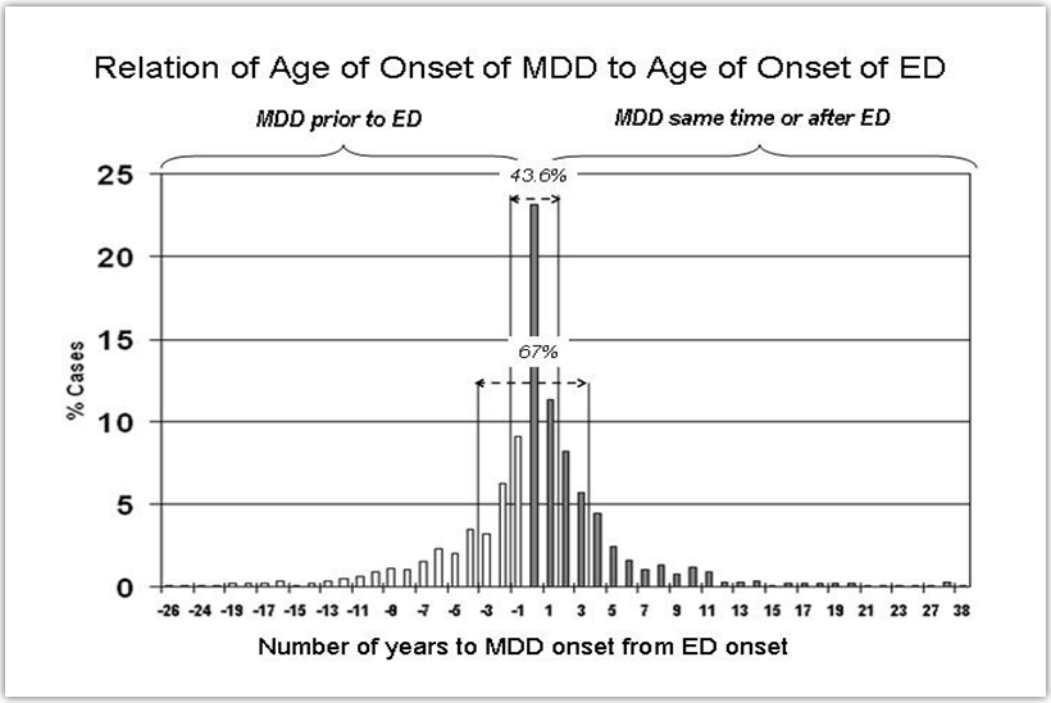
ED frequently present high comorbidity with other psychiatric disorders; Major Depressive Disorders (MDD) (F. Fernandez-Aranda, Pinheiro et al., 2007), Obsessive-Compulsive Disorders (OCD) (Jimenez-Murcia et al., 2007; Micali & Heyman, 2006), phobia and panic disorders (Swinbourne et al., 2012) and substance-use disorders (Krug et al., 2009; Krug et al., 2008).

Affective disorders are perhaps one of the clinical correlates that increase the risk for developing and maintaining an ED the most. Several studies suggest that eating and affective disorders may share common etiological and phenomenological factors and those individuals with ED show a greater risk for depression than relatives of controls (F. Fernandez-Aranda, Pinheiro et al., 2007; Lilenfeld et al., 1998; Strober, Freeman, Lampert, & Diamond, 2007). EDNOS have higher levels of depression and OCD compared to BN (Schmidt et al., 2008).

Besides the comorbidity with other psychiatric disorders, there are shared as well as unique genetic influences between EDs and clinical correlates such as BMI (Hebebrand & Hinney, 2009) personality traits such as negative emotionality (Lilenfeld, Wonderlich, Riso, Crosby, & Mitchell, 2006), high levels of stress reactivity (Ruggiero

et al., 2008), harm avoidance and high levels of persistence (Sancho, Arija, & Canals, 2008).

Figure 2: *Eating Disorders and Comorbidity with MDD (adapted from Fernández-Arana et al., 2007)*

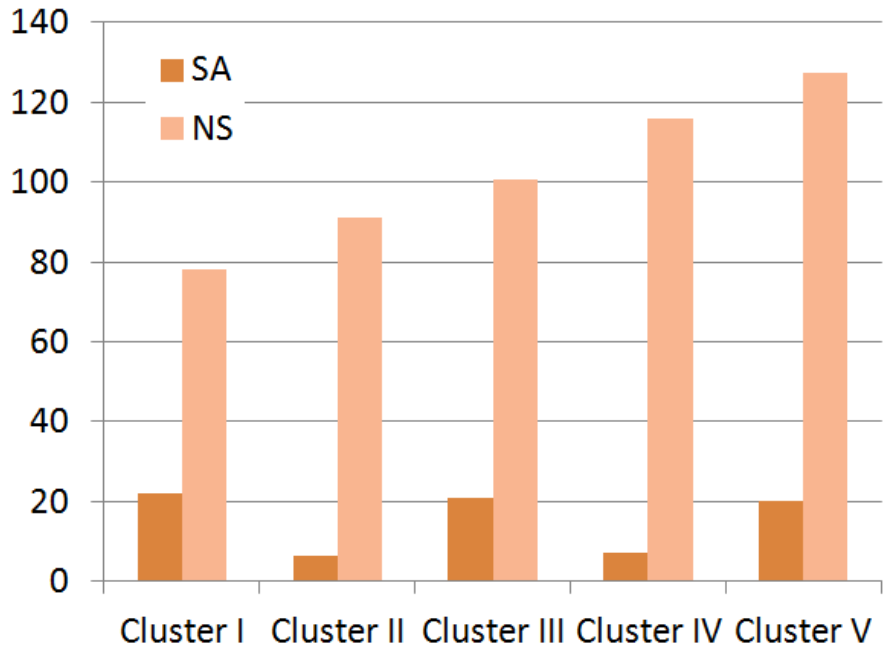


4.1 Eating Disorders and Anxiety Disorders

Women have considerably higher prevalence rate of anxiety than men (F. Jacobi et al., 2004). The comorbidity between anxiety disorders and EDs is ranging from 64% to 71% (N. T. Godart, Flament, Perdereau, & Jeammet, 2002; Kaye, Bulik, Thornton, Barbarich, & Masters, 2004). The rates of both frequency and type of anxiety disorders are the same in all ED subtypes (N. T. Godart et al., 2003). In terms of personality traits,

obsessionality has been found to be extremely high in both types of disorders. People with ED with comorbid anxiety disorders, report the onset of the anxiety disorders in childhood and preceding the ED, and can therefore be thought of as a vulnerability and risk factor. In fact, have been described common genetic factor for anxiety, depression and ED symptoms (Silberg & Bulik, 2005). The remaining one third of people with ED, who do not suffer a comorbid anxiety disorder, still present more anxious and perfectionist traits than healthy controls (N. Godart, Berthoz, Perdereau, & Jeammet, 2006) Longitudinal studies report maintenance of anxiety symptoms/disorders after ED recovery (Swinbourne et al., 2012), however, it has not yet been established whether elevated acute anxiety and obsessionality experienced during the ED is a consequence of malnutrition (Jimenez-Murcia et al., 2007). AN may be the type of ED that is mostly thought of as including traits such as perfectionism, anxiety, rigidity, persistency and harm avoidance (Kaye, Bulik, Thornton, Barbarich, & Masters, 2004), however these traits may form part of BN as well (Cassin & von Ranson, 2005).

Figure 3: *Differences between empirical clusters based on social anxiety (SAD) and TCI-R novelty seeking and distribution of ED subtypes across these empirical clusters. (adapted from Peñas-Lledó et al., 2010)*



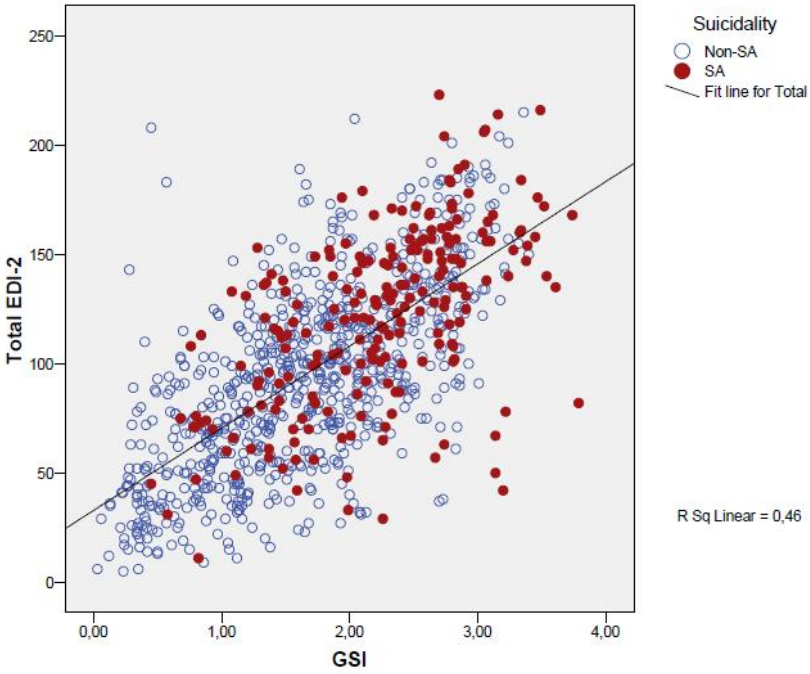
OCD is the most common anxiety disorder in ED with comorbidity ranging from 11% to 41% (Jimenez-Murcia et al., 2007). The relationship between OCD and ED in terms of symptomatology is rarely studied (Jimenez-Murcia et al., 2007) and the results are ambiguous. Some studies suggest co-morbid OCD to cause more severe ED symptomatology and poorer prognosis of recovery whereas other studies have not replicated such results (Albert, Venturello, Maina, Ravizza, & Bogetto, 2001; Herpertz-Dahlmann et al., 2001; Milos, Spindler, Ruggiero, Klaghofer, & Schnyder, 2002). Shared co-morbidity between OCD and ED is low (16.7% and 3% respectively), however obsessive personality traits were elevated in both disorders and hence they may be more similar in personality rather than in clinical features (Jimenez-Murcia et al., 2007).

The second most common anxiety disorder in ED is social phobia (20%) (Kaye, Bulik, Thornton, Barbarich, & Masters, 2004). It is also the most common lifetime comorbid disorder (N. T. Godart, Flament, Perdereau, & Jeammet, 2002). Social phobia forms part of a *social anxiety spectrum* with absence of social fear at one end, and social phobia at the other (Penas-Lledo et al., 2010). Social anxiety is situated somewhere in between. Risk factors for social anxiety are harm avoidance and novelty seeking, which also are traits that are risk factors for EDs. Recently, five new ED clusters were suggested based on social avoidance and distress and novelty seeking (Penas-Lledo et al., 2010).

4.2 Eating Disorders and Affective Disorders

Women have a higher risk of having both an ED and a mood disorder (F. Jacobi et al., 2004). The association between ED and affective disorders; especially major depressive disorder (MDD) and dysthymia, are the most commonly reported comorbid Axis I disorders in both individuals with BN and AN, with a lifetime prevalence ranging from 20-83 % (F. Fernandez-Aranda, Pinheiro et al., 2007).

Figure 4: *Eating Disorders and Suicidality (N=1697 ED cases)*



Comorbid affective disorders in ED patients have been associated with ED subtype, greater substance and alcohol abuse, suicide attempts, and greater frequency of purging behaviors (McCarthy, 1990). In patients with affective disorders, most commonly MDD, the prevalence of EDs is not higher than the one in the general population. A possible explanation for this is that EDs is less common than affective disorders and that it therefore is more likely to detect depression in individuals with ED, or in the general population for that matter, rather than detecting EDs in a more common disorder (F. Fernandez-Aranda, Pinheiro et al., 2007). However, it should be bared in mind that those who experience depression prior to their ED may see the ED symptoms as a function of their depressive mood states, while on the other hand, those who experience an ED prior to any comorbid affective disorder will see the ED symptoms as exclusive components of the ED.

More clinical features are altered when EDs present comorbidity with affective disorders. Several studies suggest that eating and affective disorders may share common etiological and phenomenological factors, such as temperament (Bulik, Sullivan, &

Joyce, 1999), genetic factors (Wade, Bulik, Neale, & Kendler, 2000), biochemical irregularities (Bailer et al., 2004), low self-esteem (Cervera et al., 2003), cognitive styles (Tiggemann, 2000), eating symptoms (Fava et al., 1997), depressive symptoms (F. Fernandez-Aranda, Pinheiro et al., 2007), attachment style (Turner, Bryant-Waugh, & Peveler, 2009), childhood adversity (Connan, Troop, Landau, Campbell, & Treasure, 2007) and psychosocial adjustment (Connan, Troop, Landau, Campbell, & Treasure, 2007).

Both ED and affective disorders are highly heritable disorders and studies on AN showed that depression is more likely to be transmitted by pro-bands who are also depressed (Lilenfeld et al., 1998), while studies on BN families indicated a cross-transmission of MDD and BN, showing elevated rates of MDD independent of the depression status of the proband (Bulik, 1987; Wade, Bulik, Prescott, & Kendler, 2004). As shown in previous studies (Lopez, Tchanturia, Stahl, & Treasure, 2008), around a third of people with ED present MDD before the onset of the ED and these individuals moreover experience longer duration of depression, more frequent psychomotor agitation and finally more thoughts about their own death (F. Fernandez-Aranda, Pinheiro et al., 2007). Either way, it is important to pay attention to mood symptoms in ED patients and ED symptoms in MDD patients. 67 % of the comorbid disorder onset occurred within a 3 year time frame (F. Fernandez-Aranda, Pinheiro et al., 2007).

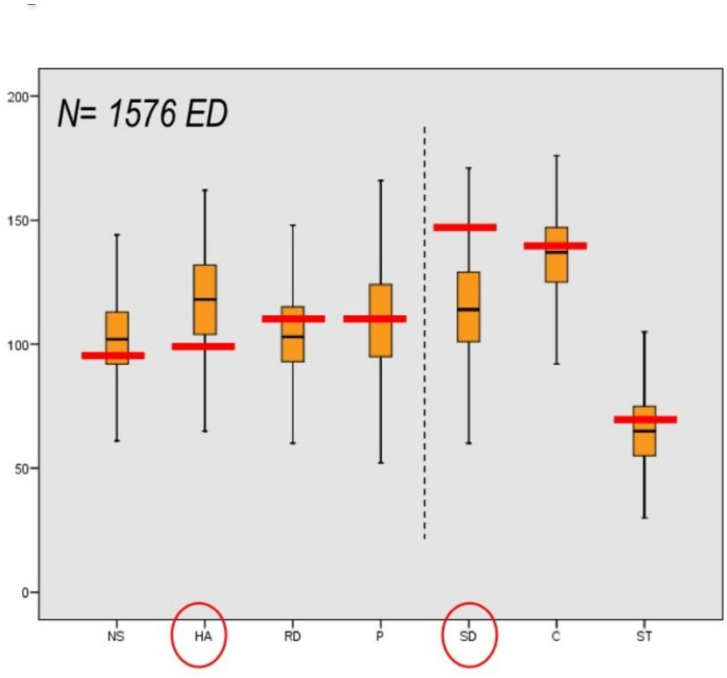
Stice, Marti and Durant (2011) (Stice, Marti, & Durant, 2011) found that; 1) Body dissatisfaction is the strongest predictor of risk for onset for any eating disorder, 2) This risk is amplified by elevated depressive symptoms, suggesting an interaction between these two risk factors.

This supports that there is an interaction between body dissatisfaction, dieting, and depressive symptoms and that all of the above mentioned form a pathway to ED onset.

4.3 Eating Disorders and Personality Disorders

Research examining links between personality and EDs has proliferated in the past two decades (Cassin & von Ranson, 2005). Cross-sectional studies have found comorbidity of Personality Disorders (PDs) among patients with ED ranging from 27% to 77% (Steiger et al., 2005; S. Wonderlich & Mitchell, 2001). Variations in samples, recruitment, and assessment methods may account for some of these inconsistencies (Ro, Martinsen, Hoffart, Sexton, & Rosenvinge, 2005; Rosenvinge, Martinussen, & Ostensen, 2000). The large discrepancy between interview and self-report assessment methods emphasizes the importance of using diagnostic interviews administered reliably by trained individuals to obtain accurate estimates of PDs among individuals with EDs (Modestin, Oberson, & Erni, 1998). After using these types of structured interview approach, several studies have found that Cluster C PDs tend to be more common among ED patients compared with Cluster A or B disorders (Bulik, Sullivan, Joyce, & Carter, 1995; Jordan et al., 2008).

Figure 5: *Temperament and Character traits (measured by means of TCI-R) in 1576 Eating Disorders*



Regarding differences between ED subtype of diagnostic and type of personality disorder, considerable variability across studies have been described (Aguera et al., 2012). Findings are most consistent for AN, especially the restricting type, which is reported to be associated with obsessive-compulsive personality disorder (OCD) as well as personality traits such as perfectionism, rigidity, conformity, and introversion (Altman & Shankman, 2009; Janowitz et al., 2009; Strober, 1980; Wu, 2008). In AN-BP and EDNOS, the association tends to be with borderline personality disorder and some cluster B and C disorders (Diaz Marsa, Carrasco Perera, Prieto Lopez, & Saiz Ruiz, 2000; Marino & Zanarini, 2001) With BN, the link tends to be with borderline and schizotypical personality disorders (Rowe et al., 2008; S. A. Wonderlich et al., 2007). Other studies, however, have failed to find a differential relationship between the form of personality disorder and type of eating disorder (Grilo et al., 2003).

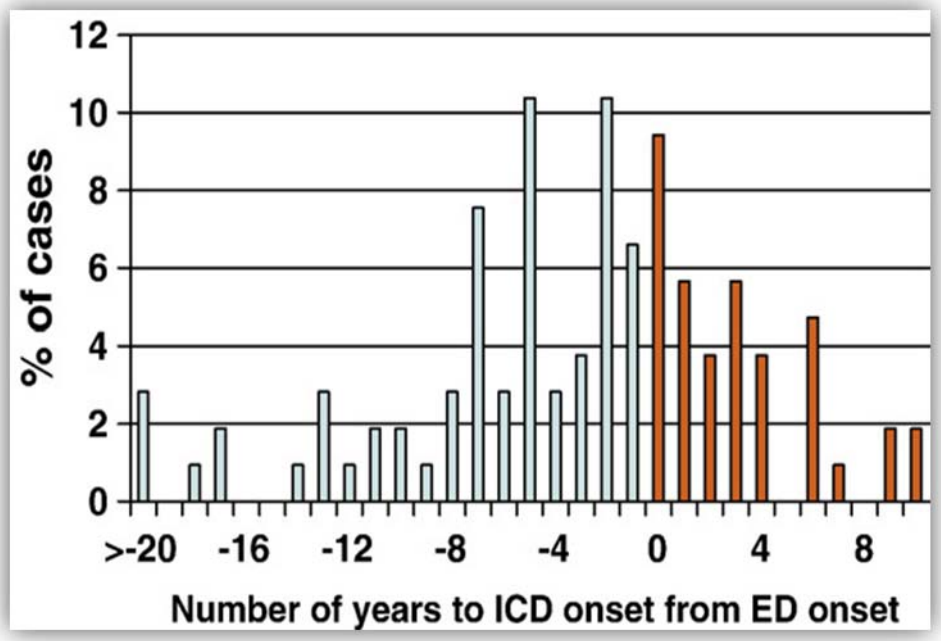
And also PDs or personality traits may attenuate treatment response and increase the risk of poor outcome in ED patients (Bulik, Sullivan, Joyce, Carter, & McIntosh, 1998; Cooper, Wells, & Todd, 2004; Thompson-Brenner et al., 2008).

4.4 Eating Disorders and Impulse Control Disorders

Impulse Control Disorders (ICD) imply not being able to control an impulse of a certain behavior, despite whatever consequence it may have. After the behavior is committed a sense of relief or pleasure is experienced. Lifetime ICD are present in 16.6 % of females with a history of ED (F. Fernandez-Aranda et al., 2008). Among these women, the ICD preceded the ED in 62% of cases and in 45% of cases the onset of the both disorders was within the same 3-year time span. The presence of lifetime ICD is limited to ED marked by binge-eating and is moreover associated to more severe ED symptomatology. Co-morbidity in ED with ICD is associated to more pathological personality traits, more frequent comorbid Axis I and II conditions. DSM-IV- TR classifies ICD as intermittent explosive disorder, kleptomania, pyromania, pathological gambling, trichotillomania and impulse-control disorder not otherwise specified (APA, 2000). ICD are not rare mental disorders. It is has not yet been established whether ICD

can affect the severity of EDs and/or the ED subtype, however the studies on the topic comorbidity with EDs are scarce. The relation between EDs and diagnosed ICD is limited to a few case studies on kleptomania (Bayle, Chignon, Ades, & Loo, 1996; McElroy, Keck, & Phillips, 1995) and trichotillomania (Hall & McGill, 1986), as well as isolated case series examining compulsive buying disorder (Claes et al., 2012; Mitchell et al., 2002). It has been established that those with BN and ICD present greater psychopathology and personality disturbances than those who have BN without ICD (F. Fernandez-Aranda et al., 2006; F. Fernandez-Aranda et al., 2008)Around 20% or more of BN patients present comorbid ICD. Comorbidity with ICD seems to be exclusive in ED subtypes where binge-eating is part of the symptomatology. This may be because ICD steam from similar sources as BED and BN, as well as alcohol dependence, with high novelty seeking, impulsivity and harm avoidance (F. Fernandez-Aranda et al., 2006; F. Fernandez-Aranda et al., 2008).

Figure 6: *Eating Disorders and Comorbidity with ICD (adapted from Fernández-Aranda et al., 2009)*



Several studies have reported high rates of binge eating and a higher prevalence of BN in a series of compulsive buyers compared to controls (Claes et al., 2012; Lejoyeux, Haberman, Solomon, & Ades, 1999). Mitchell et al. (Mitchell et al., 2002) failed to

demonstrate significant differences between healthy controls and compulsive buyers in prevalence of current or lifetime eating disorders and eating-related psychopathology. The few studies where this topic was examined specifically (F. Fernandez-Aranda et al., 2006; F. Fernandez-Aranda et al., 2008) showed that those with BN and lifetime ICD presented more extreme personality profiles, especially on novelty seeking and impulsivity, and greater general psychopathology than individuals with BN without ICD. The observed prevalence of lifetime ICD among 227 BN patients in the aforementioned study was 23.8%, with compulsive buying and intermittent explosive disorder as the most frequently reported ICD. Furthermore, when personality profiles were analyzed specifically in BN and ICD (Alvarez-Moya et al., 2007), whereas some shared personality traits between pathological gambling and BN were observed when compared with controls (low self-directedness, higher harm avoidance and cooperativeness), sex- and diagnosis-specific personality traits (higher novelty seeking in ICD) also emerged.

4.5 Eating Disorders and Substance Use Disorders

Substance use disorder is the only mental disorders that have a higher prevalence rate for men (F. Jacobi et al., 2004). Moreover, age matters and the ages 18-34 are the most predisposed ones to develop the disorder (F. Jacobi et al., 2004) the same age risk zone as in ED (Hoek, 2006). The risk for drug use is higher in people with BN compared to healthy controls and people with AN (Bulik et al., 2004). Patients with BN are most prone to use drugs, followed by individuals with BED. The co-occurrence of ED (especially BN) and drug use is therefore quite common and challenging for diagnosis and treatment of these patients. Interestingly, Anorexia Nervosa Restrictive Type (AN-R) is not associated with a higher risk of drug use. Krug et al. (2008) (Krug et al., 2008) argued in their study that BN and AN-P presented the highest drug use and AN-R and controls the lowest. BN patients had higher lifetime and current tobacco and general drug use. Bulik et al. (2004) (Bulik et al., 2004) found that comorbidity between Alcohol Use Disorder (AUD) and ED to be higher in women with BN and ANBN than women with AN. They found individuals with AUD and ED to score high on

impulsivity and perfectionism. They also found, that after controlling for ED subtype, AUD was associated with affective disorders, cluster B personality disorders symptoms and most of all various anxiety disorders. Anxiety modulation is suggested as the main function of AUDs in EDs (Bulik et al., 2004; Krug et al., 2008).

The reported prevalence of drug use has varied across papers(Calero-Elvira et al., 2009). Krug et al. (2008) (Krug et al., 2008) reports the prevalence of tobacco use in ED to be 58.1% to 68.1%, 30-50% alcohol and 7.9 to 32.6 drug use.

Drugs, up until recently, have tended to be classified as a homogenous group rather than classified by distinctions such as licit versus illicit, appetite stimulating versus appetite suppressant and street drug versus prescribed medication (Root, Pisetsky et al., 2012). Calero-Elvira et al.(Calero-Elvira et al., 2009) reported that people with ED use both appetite suppressant and appetite stimulating drugs (opiates-cannabis). They suggested that appetite suppressant drugs such as cocaine may be used initially to loose weight but shortly thereafter combined with drugs such as cannabis and tranquilizers if restlessness occurs.

4.6 Obesity

Eating disorders (ED) and disordered eating patterns are frequently linked with obesity. Several reports suggest that individuals with obesity are generally more likely to have an ED (Villarejo et al., 2012). Some studies in ED identify obesity as a specific risk factor for both binge eating disorder (BED) and bulimia nervosa (BN), in comparison to other mental health problems (C. G. Fairburn et al., 1998; C. G. Fairburn, Welch, Doll, Davies, & O'Connor, 1997). In fact, the presence of multiple weight-related problems across the lifespan is frequent and may be associated with greater severity of these ED, more general psychopathology and more dysfunctional personality traits (Villarejo et al., 2012). However, ED and Obesity have traditionally been regarded as entirely separate from obesity (Day, Ternouth, & Collier, 2009), although there are strong associations between obesity and ED (Austin, Haines, & Veugelers, 2009).

Figure 7: *BMI and Eating Disorders*

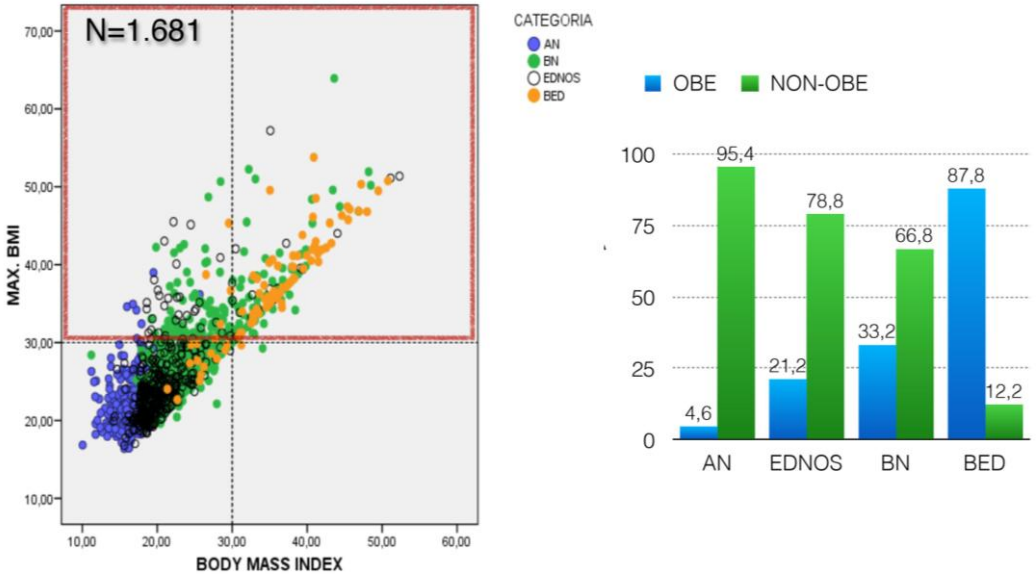
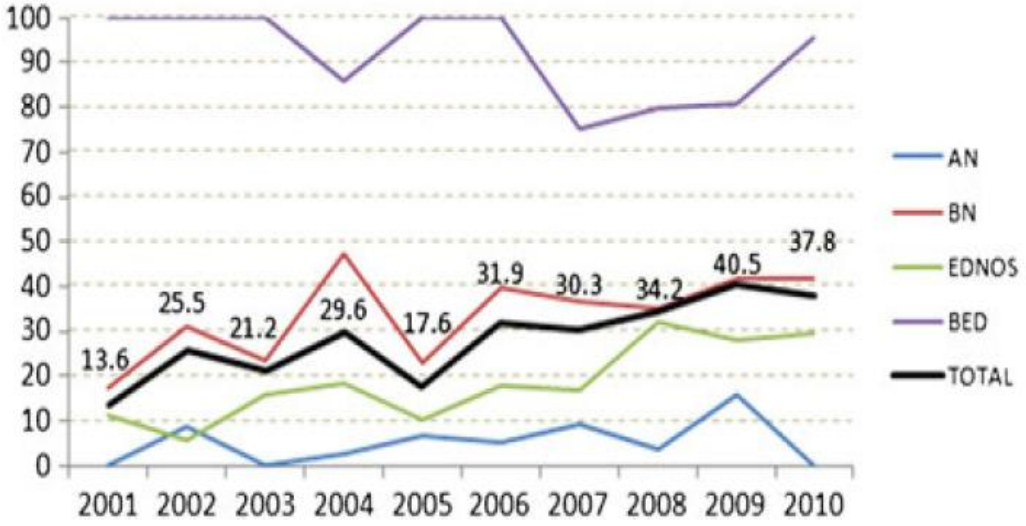


Figure 8: *BMI weigh trends in ED over the last 10 years* (Villarejo et al., 2012).



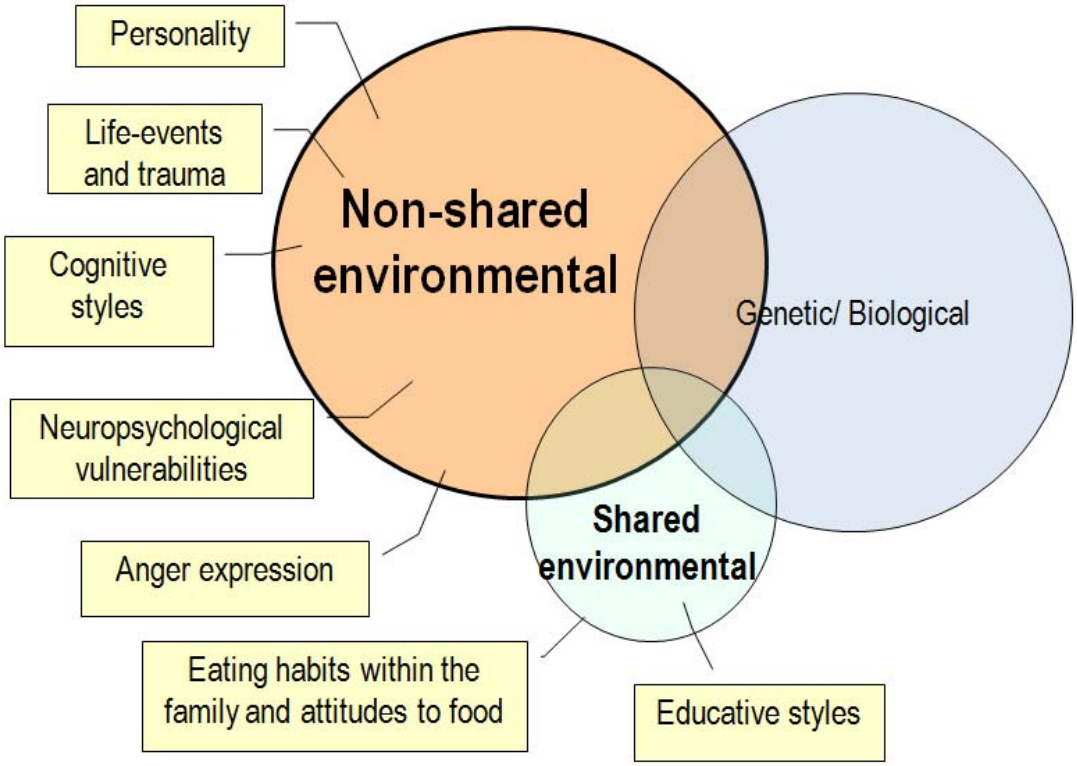
5. RISK FACTORS

The nature/nurture debate about ED is a forever ongoing debate. AN was considered a socio-cultural disorder until it was established as a neurotic syndrome in 1970 (Collier & Treasure, 2004). In 1990, they were proven to have a genetic component and there was a shift for ED from being regarded as sociocultural disorders to heterogeneous disorders (Collier & Treasure, 2004). The risk factors of ED follows the same pattern and it has not yet been established exactly what causes ED to develop. However, it has been established that no risk factor s alone causes the development of a specific ED and that both genes and environment contribute equally (C. Jacobi, Hayward, de Zwaan, Kraemer, & Agras, 2004). All ED are multi-factorial in nature and biological and genetic factors play just as an important role in the pathology. Jacobi (C. Jacobi, Hayward, de Zwaan, Kraemer, & Agras, 2004) presented 30 main risk factors for ED and divided them into social, familial, psychological, developmental and biological. Many divisions and classifications have been made within the research on risk factors and it is difficult to give a full and clear picture of them. Some risk factors are common to all ED, while some are exclusive to specific ED subtypes (Collier & Treasure, 2004{Karwautz, 2001 #199){Treasure, 1997 #198}. Risk factors may belong to different perspectives at different times nevertheless they are important for the prediction and prevention of ED.

Gender, ethnicity and age- or in other words being female, white and a young adult- with history of obesity, psychopathology, childhood eating problems, weight and shape concerns, sexual abuse and poor social comparison and self-evaluation are the most powerful risk factors for developing a ED (Day et al., 2011; C. Jacobi, Hayward, de Zwaan, Kraemer, & Agras, 2004). There are also specific development and parental risk factors for each ED subtype such as early menarche (Stice, Presnell, & Bearman, 2001; Striegel-Moore, McMahon et al., 2001) and parent obesity (Kral & Faith, 2009; Stice &

Whitenton, 2002). However, environmental risk factors were the ones relevant to the present thesis and therefore the focus were made upon them.

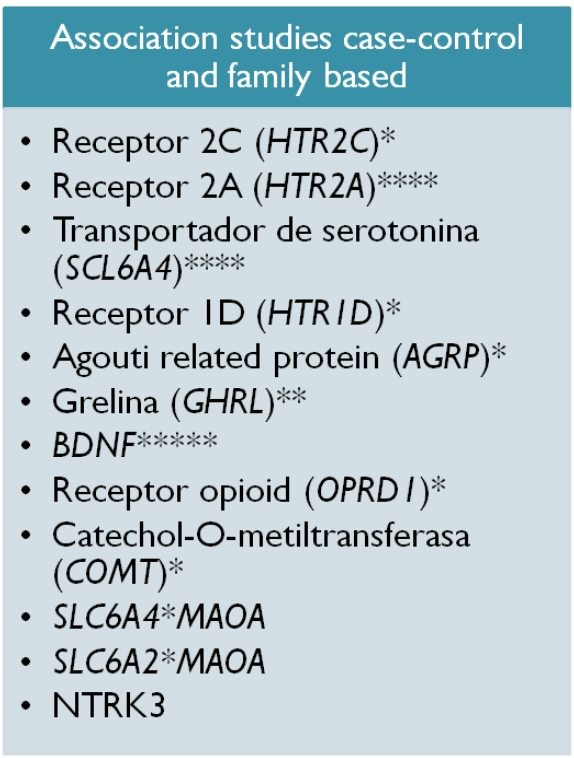
Figure 9: *Risk factors and Eating Disorders*



6. BIOLOGICAL RISK FACTORS

There is a strong genetic component in ED. Family studies have shown a significantly high risk of ED in relatives of probands with ED (Lilenfeld et al., 1998). Twin studies have reported a heritability >60% (Bulik, Baucom, Kirby, & Pisetsky). Previous molecular genetic studies of ED have provided some remarkable associations, especially for several members of the neurotrophin signaling pathway (Mercader et al., 2007; Mercader et al., 2008; Ribases et al., 2003; Ribases et al., 2005), which have been replicated in several studies (Gratacos et al., 2007). Despite these findings from candidate gene studies of ED (Ribases et al., 2008), the complete genetic complexity of the ED disorder can only be explained fully by genome-wide approaches. Linkage studies have provided suggestive findings, but none of the positive linkage regions has been replicated.

Figure 10: *Biological risk factors in ED*



7. ENVIRONMENTAL RISK FACTORS

The **shared environmental risk factors** for ED are rooted in negative childhood experiences and vulnerability for obesity (C. G. Fairburn & Harrison, 2003). When compared to healthy controls, subjects with particularly BN and BED had been more exposed to criticism regarding their weight and shape (C. G. Fairburn, Welch, Doll, Davies, & O'Connor, 1997). BED is mostly associated to risk factors of increased other psychopathology and increased obesity (C. G. Fairburn et al., 1998) while the shared risk factors in AN and BN are stronger and broader. Family, or personal, history of obesity is most common in BN and BED (Striegel-Moore, Cachelin et al., 2001). Critical comments from parents about weight and shape are also more common in the two binge-eating related disorders however people with AN also experience a more conflictive family environment. Moreover adverse childhood experiences are great risk factors for developing any ED (Schmidt, 2005).

Dieting, drive for thinness and poor self-evaluations are one of the most common **non-shared environmental risk factor for ED**. The risk factors for BN are especially rooted in dieting and poor self-esteem (Day, Ternouth, & Collier, 2009; Griffiths et al., 1999). Perceived pressure to be thin, modeling of body image, thin-ideal internalization and self reported dieting are risk factors more prone to people with BN. People with BN have higher body dissatisfaction than AN and this is most likely due to their higher BMI (F. Fernandez-Aranda, Dahme, B. and Meermann, R., 1999; Fernandez, Probst, Meermann, & Vandereycken, 1994). This may also be due to the fact that people who develop BN are not only more likely to be overweight, they are also more likely to overeat and this “inhibited” eating style is a specific risk factor for BN.

When it comes to contrasting BN with AN in terms of risk factors, body dissatisfaction and negative affect are risk factors for both pathologies, whereas the risk of dieting is more influential in BN(Cooper, Wells, & Todd, 2004; C. G. Fairburn, Welch, Doll,

Davies, & O'Connor, 1997) and self-evaluation and perfectionism in AN (C.G. Fairburn, Cooper, Doll, & Welch, 1999).

7.1 Sociocultural risk factors

7.1.1 Childhood eating

The literature suggests childhood eating and weight problems to be a trigger for EDs later in life. Childhood overeating has been established as a risk factor for adult BN and so has childhood obesity and overweight (Micali et al., 2007). Eating quickly and a lot in childhood have been found to be a predictor of BN in adulthood. Childhood obesity is a risk factor for ED, especially BN and BED (Villarejo et al., 2012), and the symptomatology involved in these disorders should always be bared in mind when treating childhood obesity (Hebebrand & Hinney, 2009). Childhood obesity may be a consequence of an ED (binge eating) and hence causing abnormal weigh gain. This emotional eating may transform into another type of ED such as AN or BN in early or mid-adolescence. Reasons for the onset at that time are higher levels of emotional instability and lower self-esteem (J. M. Johnston, 2004).

Additionally, obesity between the ages of 6 months and 1 year is more common in women with AN (C. Jacobi, Hayward, de Zwaan, Kraemer, & Agras, 2004). Moreover, childhood pica, was seven times more frequent in adults with BN (C. Jacobi, Hayward, de Zwaan, Kraemer, & Agras, 2004) However, this was later challenged by Micali et al. (2007) (Micali et al., 2007)who did not find a relationship between pica and later ED. As for AN, picky eating in childhood, conflicts around eating and digestive problems were of more relevance for developing the disorder (C.G. Fairburn, Cooper, Doll, & Welch, 1999). However, there was no evidence for this when the findings were attempted to be replicated in a study with affected and unaffected sisters (Micali et al., 2007).

7.1.2 Family style and the psychopathology within

Numerous studies have reported an association between parenting behaviors and the development of disturbed eating behaviours (Huh, Tristan, Wade, & Stice, 2006) (Enten & Golan, 2009) (Golan & Crow, 2004). Children of mothers with EDs have been shown to be at a higher risk of developing ED´s later in life than children of mother's with no ED (Birch & Fisher, 1998; Park, Senior, & Stein, 2003). Parents that have a high drive for thinness and body dissatisfaction are more likely to project this on their children and encourage them to be thin (Agras, Bryson, Hammer, & Kraemer, 2007; Dubois, Farmer, Girard, Peterson, & Tatone-Tokuda, 2007). Moreover, perceived family pressure has been thought to be a possible trigger for EDs (Agras, Bryson, Hammer, & Kraemer, 2007; Young, Clopton, & Bleckley, 2004). While some researchers (Blodgett Salafia, 2000; Dubois, Farmer, Girard, Peterson, & Tatone-Tokuda, 2007) have suggested that poor parenting cause problematic eating behaviours, other investigators (Cooke, Haworth, & Wardle, 2007; Huh, Tristan, Wade, & Stice, 2006) have indicated that it is the eating problem that elicits poor parenting (Sheffield, Waller, Emanuelli, Murray, & Meyer, 2009) and yet others (Huh, Tristan, Wade, & Stice, 2006; Lilenfeld et al., 1998) have suggested that inadequate parenting style and problematic eating behaviours are reciprocally related.

High parental expectations are often a reflection of sociocultural pressures, including the ideal to be thin (McCarthy, 1990). Various studies (Young, Clopton, & Bleckley, 2004) have shown that if parents highly value success and high social status, this may cause EDs because high social status often involves the ideal to be thin. Interestingly, some studies (Steiner et al., 2003) contradict these findings by suggesting that high parental expectations protects against EDs because they often involve higher family caring, involvement and less psychological distress. Accordingly, other studies (Rodgers & Chabrol, 2009) have revealed that a lack of support from the family may actually lead to low self-esteem and insecurity.

People with AN and BN report more conflicts within their family setting. Their parents tend to have higher expectations and be more critical, compared to families of healthy

controls. The most common maladaptive parental influences include criticism or comments related to the child's physical appearance or body weight (Rodgers & Chabrol, 2009). These parental influences can lead to body dissatisfaction, possible body image disturbances and finally distorted eating behaviours (Treasure, Whitaker, Todd, & Whitney). It has especially been shown in families with BN that weight and shape concerns often steam from critical comments (Taylor et al., 2006). In BN families, there is a lower contact between family members and that may a natural explanation to why the relationships are more tense and conflictive.

When it come to familial psychopathology, it has been demonstrated that ED are six times more likely to occur in first-degree relatives of people ED patients and moreover that these patients are more likely to have first-degree relatives with a psychiatric disorder compared to healthy controls (Haslam, Mountford, Meyer, & Waller, 2008). In summary, family members of AN and BN patients are more likely to suffer an ED as well or a psychiatric disorder. A part from the highest risk being to develop an ED, there is a particular high risk to develop affective and anxiety disorders (Penas-Lledo et al., 2010). Interestingly, the tendency for people with BN to have higher rates of substance and alcohol abuse and people with AN that have higher rates of obsessive compulsive behaviour is evident in their expression (M. B. Anderluh, Tchanturia, Rabe-Hesketh, & Treasure, 2003; Calero-Elvira et al., 2009) .

7.1.3 Social rank

Socio-cultural studies have shown that the risk of developing an ED is perhaps more related to social class these days rather than cultural background. This is interesting, considering that higher social class generally correlates with a lower risk for having a mental disorder (F. Jacobi et al., 2004). Toro et al.(Toro et al., 2006) found that 6-7% out of Spanish and Mexican middle/upper class young females have an ED and 25% present a high or moderate risk to develop one. The concern with weight and physical appearance was present in both groups. However, there does seem to be a cultural difference in terms of ideal body models and what size and shape of certain body parts that are desired (Toro et al., 2006).

People with AN present features of lower social rank through comparing themselves negatively to others and by being more prone to submissive behaviour, even after a possible recovery (Connan, Troop, Landau, Campbell, & Treasure, 2007). Poor social comparison and more submissive behaviour seem to be present in all types of ED however low social rank is especially a risk factor for AN. As suggested in other studies (Ferreira, Pinto-Gouveia, & Duarte), a possible explanation for this is the elevated levels of perfectionism in people with ED, especially AN. The desire to reach a certain social rank or status may generate maladaptive perfectionism and vice versa (Bardone-Cone et al., 2007). Moreover, such perfectionism often lead to higher levels of social comparisons in terms of weight and physical appearance, and the desire to reach a social status involving the ideation that being thin is desirable.

Low social rank can also steam from high childhood interpersonal adversity (CIA) involving parental pressure, high expectations and over-protectiveness, feelings of insecurity and inferiority (Troop, Allan, Treasure, & Katzman, 2003).

The Social Comparison through Physical Appearance Scale (SCPAS) measures social rank based on one's physical appearance and has moreover been associated to social comparison and shame, anxiety, depression, stress and EDs symptomatology. Drive for thinness and the wish for physical attractiveness is argued to be a strategy for assuring a certain social position (Ferreira, Pinto-Gouveia, & Duarte). When it comes to social comparisons, they can be made upwards or downwards; an upward comparison is made with someone that the person comparing considers superior (such a comparison can be done in order to achieve self-improvement, however it often ends in negative emotions) while a downward comparison is made with someone inferior (and hence generates feelings of self-enhancement and self-protection) (Ferreira, Pinto-Gouveia, & Duarte). Social comparison in terms of physical appearance is in order words a way of confirming one's social rank (Troop, Allan, Treasure, & Katzman, 2003). A wish to obtain a certain social rank can in other words be dangerous if that wish is taken too, far in terms of physical attractiveness, ending up with an ED.

7.2 Eating Disorders and individual risk factors and emotion regulation

7.2.1 Weight concerns, dieting and negative body image

Almost 80% of women have dieted one or more times in their life (Stice, 2002). Therefore, not surprisingly, dieting is perhaps the conduct mostly associated to ED by the general population. Taking dieting a step too far might lead to an ED. It can either lead to more anorexic or bulimic behaviour. If a person does not know when to stop dieting and more importantly where to draw the line on how little to eat, dieting can take the direction towards AN. Dieting can also trigger the opposite behaviour, namely binge eating, which in the worst case may lead to BN (C. Jacobi, Hayward, de Zwaan, Kraemer, & Agras, 2004). It has been established that girls as young as years old are aware of the desirable ideal of being "thin" and that the risk for dieting starts in early adolescence and that the risk increases with age (Westerberg-Jacobson, Ghaderi, & Edlund, 2011). Girls who diet are up to 18 times more likely to develop an ED compared to girls who don't. Moreover, girls with higher BMI than peers are more at risk (Tiggemann, 2000). Westerberg-Jacobsen et al. (2011) (Westerberg-Jacobson, Ghaderi, & Edlund, 2011) report the main motive for wishing to be thinner to be "feel better about yourself ' followed by 'correspond to the social ideal', 'being able to wear particular clothes', 'being noticed and fitting in' and 'avoiding remarks'.

All of the above motives suggest that the wish to be thin is as socially implanted as personal. Dieting increases the risk of developing BN in comparison to AN, probably because of the greater social connotations present in the disorder (C. G. Fairburn, Welch, Doll, Davies, & O'Connor, 1997) and the elevated body dissatisfaction (F. Fernandez-Aranda, Dahme, B. and Meermann, R., 1999).

7.2.2 Sexual abuse and traumatic experiences

Frequently, childhood sexual abuse or traumatic experiences have been associated to developing an ED (Kong & Bernstein, 2009). ED patients have higher rates of child sexual abuse than controls (Waller, 1991). Previous research has established that there is a clear significant difference between ED patients and healthy controls in terms of rates of child sexual abuse. People with BN are more often report sexual abuse than people with AN (Waller, 1991) than history of sexual abuse in women with ED is related to lower levels of perceived control (Waller, 1998). Childhood sexual abuse is associated to impulsivity behaviours in EDs such as self-cutting and substance abuse (Corstorphine, Waller, Lawson, & Ganis, 2007).

7.2.3 Low self-esteem

Low self-esteem is one of the most frequently reported risk factors for EDs (Gual et al., 2002; Vanderlinden et al., 2009). Feelings of not being enough and having a negative self-concept is generally something that predisposes some people to develop an ED. People with ED often judge their self-worth exclusively in terms of their shape and weight, when healthy controls tend to base their self-esteem on more factors such as relationships, work, and parenting (C. G. Fairburn & Harrison, 2003). Low self-esteem is described as a large discrepancy between the ideal image of oneself and the self that one perceives as real (Young, Clopton, & Bleckley, 2004). Often low self-esteem is in regard to physical appearance and body weight (Grubb, Sellers, & Waligroski, 1993). Various psychometric measures of self-esteem (Cervera et al., 2003; Gila, 2005; Griffiths et al., 1999) have been developed in the last decades. In the ED literature, the studies employing these instruments have generally found that ED patients display lower self-esteem than healthy controls (Griffiths et al., 1999). Most of previous studies have assessed self-esteem as a single construct. However, Connan et al. (Connan, Troop, Landau, Campbell, & Treasure, 2007) points out that there are many

contributing factors to low self-esteem such as friendships, personality traits and anxiety.

Self-esteem has been assessed as multiple constructs, where body esteem has been differentiated from self-esteem (Mendelson, McLaren, Gauvin, & Steiger, 2002). ED patients have both lower social self-esteem and body esteem than healthy controls (Gila, 2005). Studies up until now have also failed to find the precedence of low-self esteem in ED as well as the depressive symptomatology (C. Jacobi, Hayward, de Zwaan, Kraemer, & Agras, 2004).

7.2.4 Perfectionism

Perfectionistic traits are typical in people with ED who present higher levels in comparison to healthy controls (C. Jacobi, Hayward, de Zwaan, Kraemer, & Agras, 2004). Recent studies have connected perfectionistic traits with alterations in serotonin activity (C. Jacobi, Hayward, de Zwaan, Kraemer, & Agras, 2004). The relationship between perfectionism and AN is clearly established in the literature, whereas aspects of the link to BN is yet to be confirmed (Bardone-Cone et al., 2007). Perfectionism has been suggested to be a key maintenance mechanism in the course of severe ED (Christopher G. Fairburn, Cooper, & Shafran, 2003). It can act as a risk factor alone, especially for bulimic symptoms, or together with other factors as a maintaining factor. In fact, perfectionism has been suggested to be a personality trait increasing the risk for developing an ED and an endurable personality trait after recovery (Lilenfeld, Wonderlich, Riso, Crosby, & Mitchell, 2006). Maladaptive perfectionism predicts poorer outcome in ED and particularly in AN. It can also be questioned whether high levels of perfectionism in AN contributes to chronification of the disorder. If perfectionism is a trait and can cause psychopathology, it may be hard to prevent relapses within ED if the high level of perfectionism is unchangeable.

7.2.5 Excessive exercising

Excessive activity is a long established risk factor in EDs; nevertheless, the research on the topic is scarce (Meyer, Taranis, & Touyz, 2008). It is a risk factor in all EDs and most common in AN-P. The prevalence ranges from 20% in people with BN to 55 % in people with AN and 57% in acute BN patients and 81% in acute AN patients (Meyer, Taranis, & Touyz, 2008). Excessive exercise is in other words most frequent in AN and a risk and maintaining factor for AN to lose even more weight and in BN-P as compensation form for the binges instead of purging (Davis et al., 1997). Jacobi et al. (2004) (C. Jacobi, Hayward, de Zwaan, Kraemer, & Agras, 2004) report in their review that *female athlete triad* is what previous research has focused on within excessive exercising. *Female athlete triad* involves eating disorder symptomatology and amenorrhea in professional athletes.

More recently, research has emphasized the importance of excessive exercise and found an association between exercise beliefs, obsessive beliefs and obsessive-compulsive behaviours in ED (O. Johnston, Reilly, & Kremer; Naylor, Mountford, & Brown, 2011). This has implications for the assessment and treatment of excessive exercise. Further research is necessary to determine the causality of these relationships.

Excessive exercise is not only an important predictor of the onset of an ED, it also predicts poorer treatment response and long-term recovery (Meyer, Taranis, & Touyz, 2008).

7.3 Eating Disorders and Emotions

7.3.1 Emotional disturbances in ED

Emotional disturbance is a core feature in ED and risk factor in other psychiatric conditions such as anxiety disorders, substance use disorders and affective disorders (C. Jacobi, Hayward, de Zwaan, Kraemer, & Agras, 2004). Emotional disturbance was initially described as pathological concern about weight and shape, leading to extreme weight loss (Bruch, 1973). Initial weight loss might cause feelings of pride, control and

elevated self-esteem before it turns into the opposite (Joos et al., 2012). Currently, it is being recognized as socio-emotional difficulties and poor emotion ht be recognition (Oldershaw et al., 2012). It is especially a core feature in AN however an important feature in BN as well but in a different manner. Negative beliefs about emotions, takes form as complete avoidance and suppression of certain emotions while it serves as suppression of already triggered emotions in BN (Oldershaw et al., 2012). Furthermore such emotional avoidance or suppression may be carried out by applying ED conducts or cognitions.

People who have fully recovered from AN have similar emotion beliefs and levels of emotion suppression as to healthy controls and can moreover tolerate emotions to the same extent. However, feeling of belonging to a lower social rank and making poorer social comparisons still stand in AN after recovery (Oldershaw et al., 2012).

There is a difference between ED patients, depressed patients and healthy controls in emotion perception in terms of anger. ED patients and depressed patients experience less anger than healthy controls (independent of the severity of the depression) (Joos et al., 2012). This alteration of emotional perception of anger reflects interpersonal difficulties and support theories of social comparison and lower social rank.

Emotions are connected to cognitive functions as well as social cognitions (Joos et al., 2012). Teasing from peers and others about weight and shape are associated with emotional abuse and neglect (Taylor et al., 2006). Even if negative comments and criticism concerning weight and shape may be said harmlessly by family members, they may have a long lasting negative effect. In fact, negative comments have been associated with greater childhood and adolescent BMI, minority status and biological father's maximum body size (Taylor et al., 2006).

7.3.2 Emotion and Eating

Emotional regulation processes and negative mood are risk and maintenance factors in BN and BED, Many BN and BED patients report negative emotional states as triggers for their binge eating behavior. People who engage in binge eating behaviour are less able to tolerate negative mood, which in turn often precedes binge eating episodes (Joos et al., 2012). A multifactorial model was presented, by Vanderlinden et al., 2004(Vanderlinden et al., 2004), in which they suggest there to be 25 triggers on an average for every binge and moreover that these triggers are the same for all ED purging subtypes; AN-P, BN-P and BED. In terms of the triggers, the majority are emotional items and mark several negative emotions such as feeling depressed, anxious, sad, lonely or guilty. This suggests that binge eating serves as a way to escape from negative emotions or release the pressure of them . Negative mood as a factor in BN and BED highlights the importance of subtyping the disorders along not only dieting behaviours but also level of depression (Joos et al., 2012).

8. THERAPY AND TREATMENT

Only one-third of people who met AN criteria and 6% of those who met the ones of BN are treated in mental healthcare (Hoek, 2006).The sooner an ED is diagnosed and treated, the better according to the National Institution of Mental Health (NIMH, 2011) . This is a good point, however not true in all cases. Acute patients do not always have enough conscientiousness of the disorder in order for the psychological treatment to be effective (Hartmann, Weber, Herpertz, & Zeeck, 2011) The APA "Practice Guideline for the Treatment of Patients with Eating Disorders" and *Clinical Evidence* contain three main objectives; (1) weight restoration; (2) treating underlying symptoms (OCD behaviors, anxiety, depression and body image distortion; (3) nutritional rehabilitation (re-feeding in AN and correction of binge eating and purging in BN) (APA, 2000).

AN patients have a 25-50 % possibility of recuperation within 10 years after the beginning of the illness, 25 % develop into chronicity, and mortality rates have been shown to be as high as 25 % (Berkman, Lohr, & Bulik, 2007; Bulik, Berkman, Brownley, Sedway, & Lohr, 2007; Steinhausen, 2002)BN patients on the other hand, have about 50% possibility of full recovery, 30% of partial recovery and 20% of continuing symptomatology (Keel & Mitchell, 1997)Futhermore, after a mean follow up of 11.5 years, 11% still met criteria for BN, whereas 70% were in full or partial remission (Keel, Mitchell, Davis, Fieselman, & Crow, 2000).The **clinical prognosis** of ED patients is difficult to establish since the course of the disorders and the long-term outcomes of treatments are uncertain (Berkman, Lohr, & Bulik, 2007). In addition, drop-out rates are extremely high as well as relapse rates (Kordy et al., 2002).

8.1 Treatment of AN

As reported in previous studies and guidelines the most important acute intervention to be made in AN patients is centered on restoring weight. A weight increase is necessary to put acute patients in need of hospitalization out of immediate danger and moreover to make them apt to initiate psychological treatment. If the BMI is lower very low, there is a risk of suicide and interpersonal problems an admission as an inpatient is probably needed (C. G. Fairburn & Harrison, 2003). However, most AN patients are treated as outpatients, ideally with the contribution from a mixture of different health professionals (Bulik, Berkman, Brownley, Sedway, & Lohr, 2007). There are 4 main phases of treatment; (1) motivate patients to see that they need help and maintain their motivation for treatment, (2) restoring weight, (3) psychological treatment (often CBT based) of body image related aspects, eating habits, social skills, low self-esteem and psychosocial functioning, (4) achieving long-term remission and rehabilitation, or full recovery. The evidence for treatment of AN is very limited in terms of therapy (Berkman, Lohr, & Bulik, 2007; Wade, Treasure, & Schmidt, 2011) and there are no significant findings of pharmaceuticals to have an effect on weight increase for AN (Bulik, Berkman, Brownley, Sedway, & Lohr, 2007). Recently, however, new models of treatment are under review (Wade, Treasure, & Schmidt, 2011).

8.2 Treatment of BN

The context and how BN patients respond to treatment is more consistent in comparison to AN and the treatment most often take place in out-patient settings (Shapiro et al., 2007). The most acute and core intervention described in BN is to reduce and eliminate purging behaviours, such as vomits, laxative and diuretic use, and binge eating (Shapiro et al., 2007). If the frequency of purging is high, a short hospital admission may be necessary to reduce vomits or laxative use. The treatment of BN is more psychosocial and psycho-educational in its nature, as well as, focused on nutritional guidelines. Several controlled studies have shown that cognitive behavioural therapy (CBT) and

interpersonal therapy (IPT) are the two most effective approaches in the treatment of BN, with CBT leading to more rapid symptomatic change (C. G. Fairburn, Welch, Doll, Davies, & O'Connor, 1997). Medication is more common in BN than AN, and fluoxetine is the most common pharmaceutical treatment (Shapiro et al., 2007).

Research into the treatment of BN has also been summarized in several recent reviews (Bacaltchuk & Hay, 2003; Shapiro et al., 2007). Guided treatment delivering CBT through books (Schmidt & Treasure 1993), computer-or a web-based programme (Carrard et al., 2006) have also been fruitfully employed in the management of BN. Furthermore, as with other psychiatric disorders, several studies on BN have shown that alternative brief interventions or non-therapist-led approaches seem to be effective, especially in those patients with less severe symptoms (F. Fernandez-Aranda et al., 1998; Jimenez-Murcia et al., 2009).

8.3 Treatment of EDNOS

There has been no research on the treatment of EDNOS other than the promising effort on BED. For this reason the NICE guidelines highlights the lack of adequate support for the management of EDNOS (with the exception of BED), for which guidelines are reduced to recommending that "the clinician considers following the guidance on the treatment of the eating problem that most closely resembles the individual patient´s ED" (Wilson & Shafran, 2005).

8.4 Treatment of BED

Most of the treatments applied in BN have been implemented for the management of BED (Brownley, Berkman, Sedway, Lohr, & Bulik, 2007). According to the NICE guidelines, CBT was advocated an"A" grade. More recently, antidepressant [Selective Serotonin Reuptake Inhibitor (SSRIs)], anti-obesity and anti epileptic/mood stabilizer drugs have been found to be effectual in weight decrease (Arnold et al., 2002). As regards to obese patients with binge eating, sibutramine, a specific reuptake

noradrenaline and serotonin inhibitor (SNRI) has been used and found to diminish both weight and binge eating occurrences (Appolinario et al., 2003). A recent systematic review of randomized controlled trials in BED has been published by Brownley and Colleagues (Brownley, Berkman, Sedway, Lohr, & Bulik, 2007).

9. GENERAL OBJECTIVES AND HYPOTHESIS

The main objective of the present dissertation is to highlight the importance of socio-cultural risk factors in ED and put a new focus on the classification system of risk factors related to self-esteem and self-values. The full potential of psychological and environmental information to prevent and treat EDs was used by employing an interactive and translational approach running from basic science through to the clinic.

Eating disorders (ED) are universal complex mental disorders that frequently present high comorbidity with other disorders of Axis I and Axis II (APA, 2000). In the development and maintenance of an ED, socio-cultural and individual risk factors play an important role both for developing and maintaining an ED (C. Jacobi, Hayward, de Zwaan, Kraemer, & Agras, 2004). Even if a lot of focus has been put on these risk factors in the literature, the number of studies and findings are still scares when it comes to the associations between social and self standards or expectations. Moreover, the controversy around the diagnostic subtype EDNOS has put the classification system of ED into question and whether aspects such as risk factors and comorbidity with other pathologies such as affective disorders should be considered to a greater extent in the diagnosis as well as treatment of an ED.

9.1. Main objectives:

1) To examine clinical and psychopathological correlates of ED.
2) To examine possible distribution and clustering of ED subtypes across empirical subtypes.

3) To examine how social and individual risk factors are associated to ED.

4) To assess whether such associations between social and individual standards and ED can be used to predict the subtype of an ED.

5) To examine the clinical relevance of empirical ED subtypes in treatment.

9.2 Secondary objectives:

1. To examine whether ED subtypes can be categorized differently and more accurately based on level of dieting and co-morbidity with depression.
2. To establish whether new derived ED subtypes can be more valid and clinically useful.
3. To compare the importance of social and individual standards of ED patients and healthy controls.
4. To assess whether dysfunctional standards in certain areas can be associated to a specific ED subtype.

9.3 Main hypothesis:

1) Social and individual risk factors will be associated differently to different ED subtypes in terms of physical appearance, family standards and self-achievements.

2) New empirical subtypes of ED based on drive for thinness and depression will be new valid constructs in the classification within ED.

9.4 Secondary hypothesis:

1. Large self-discrepancies in certain domains of social and individual standards will be specifically related to the development of an ED.
2. Such self-discrepancies are risk factors found in the domains physical appearance, family standards or self-achievements, which further will be related to specific ED subtypes and therefore questions the ED within-diagnostic heterogeneity.
3. New empirical ED subtypes based on the level of drive for thinness and depression are of just as valid as standard ED subtypes on measures of bulimic behaviours, eating and comorbid psychopathology.
4. New empirical subtypes will aid CBT treatment and prevent dropout rates.

Applied Methodology: The studies forming part of this dissertation were initially developed at the Eating Disorder Unit at the Psychiatric Department, of the University Hospital of Bellvitge. Clinical participants were consecutive referrals for assessment and treatment at the clinical sites. The designs and analyses were of a predictive and associative nature (case-control design).

Expected results: To increase the knowledge on individual and social risk factors associated to ED. Those may have clinical implications for diagnosis, early detection and prevention.

10. RESULTS

10.1 Study 1

RELEVANCE OF SOCIAL AND SELF-STANDARDS IN EATING DISORDERS

Abstract

Objectives: To compare the importance given to self/other standards by ED patients and healthy controls. **Methods**: A total of 392 individuals (240 consecutively referred and 152 healthy controls) took part in this study. All subjects were diagnosed according to DSM-IV TR criteria and were female. Participants completed the Family Style, Self-Expectations and Emotional related subscales of the Cross Cultural Questionnaire (CCQ). **Results:** Three domains (namely family standards, self-achievement and physical appearance were associated with ED. Family standards scores discriminated for the presence of an ED (area under ROC curve equal 0.89), the main predictors being a higher level of importance of physical appearance ($p < .001$), family standards ($p = .029$) and conflicts with parents about physical appearance ($p < .001$). Higher self-standards, in physical appearance, were more relevant in BN and EDNOS, higher family standards were more associated with AN. **Conclusions**: High self- and social standards are common features in ED. The parallelism, that ED may establish between reaching them and their life success, may have a crucial role as a developing and maintaining factor in ED.

RESEARCH ARTICLE

Relevance of Social and Self-standards in Eating Disorders

Katarina Gunnard[1,2], Isabel Krug[3], Susana Jiménez-Murcia[1,2,4], Eva Penelo[5], Roser Granero[5], Janet Treasure[3], Kate Tchanturia[3], Andreas Karwautz[6], David Collier[3], José M. Menchón[1,4,7] & Fernando Fernández-Aranda[1,2,4]*

[1]Department of Psychiatry, University Hospital of Bellvitge-IDIBELL, Barcelona, Spain
[2]CIBER Fisiología de la Obesidad y Nutrición (CIBERobn), Instituto Salud Carlos III, Barcelona, Spain
[3]King's College London, Institute of Psychiatry, London, UK
[4]Department of Clinical Sciences, School of Medicine, University of Barcelona, Barcelona, Spain
[5]Laboratori d'Estadística Aplicada, Departament de Psicobiologia i Metodologia, Universitat Autònoma de Barcelona, Barcelona, Spain
[6]Department of Child and Adolescent Psychiatry, Medical University of Vienna, Vienna, Austria
[7]CIBER Salud Mental (CIBERSAM), Instituto Salud Carlos III, Barcelona, Spain

Abstract

Objective: To compare the importance given to self/other standards by eating disorder (ED) patients and healthy controls.
Methods: A total of 392 individuals (240 consecutively referred and 152 healthy controls) took part in this study. All subjects were diagnosed according to the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision criteria and were female patients. Participants completed the Family Style, Self-Expectations and Emotional related subscales of the Cross-Cultural Questionnaire.
Results: Three domains (namely, family standards, self-achievement and physical appearance) were associated with ED. Family standards scores discriminated for the presence of an ED (area under receiver operating characteristic curve equals 0.89), the main predictors being a higher level of importance of physical appearance ($p<.001$), family standards ($p=.029$) and conflicts with parents about physical appearance ($p<.001$). Higher self-standards, in physical appearance, were more relevant in bulimia nervosa and ED not otherwise specified, whereas higher family standards were more associated with anorexia nervosa.
Conclusions: High self-standards and social standards are common features in ED. The parallelism that ED may establish between reaching them and their life success may have a crucial role as a developing and maintaining factor in ED.

Keywords
eating disorders; eating disorder subtypes; self-achievement; physical appearance; self-esteem; self-standards; social standards

***Correspondence**
Fernando Fernández-Aranda, PhD, FAED, Department of Psychiatry and CIBERobn, University Hospital of Bellvitge, c/ Feixa Llarga s/n, 08907 Barcelona, Spain.
Tel.: +34-93-2607227; Fax: +34-93-2607193.
Email: ffernandez@bellvitgehospital.cat

Published online in Wiley Online Library (wileyonlinelibrary.com) DOI: 10.1002/erv.1148

Introduction

Several environmental risk and maintaining factors have commonly been described among eating disorder (ED) subtypes (Jacobi, Hayward, de Zwaan, Kraemer, & Agras, 2004), including social and parental pressure (Klump, Wonderlich, Lehoux, Lilenfeld, & Bulik, 2002), low self-esteem and satisfaction with oneself, (Cockerham, Stopa, Bell, & Gregg, 2009; Klump et al., 2002; Mendelson, McLaren, Gauvin, & Steiger, 2002; Silvera et al., 1998) high self-standards and negative social comparison (Troop et al., 2003).

Because of the complexity of these elements, various authors have suggested assessing several areas together when trying to untangle associated risk factors to EDs (Dobmeyer & Stein, 2003; Jacobi et al., 2004; Mazzeo et al., 2010). There is interest in the following: (i) whether these factors evolve more aspects within the family, society or individually and (ii) whether they differ for different ED subtypes.

High self-standards

The *social ideal self* has been the concept used to describe the act of comparing one's actual self to what oneself expect others to expect one to be (Higgins, 1987). This has been elaborated further on and is a new concept; *perceived incompetence* has been introduced to measure the feeling of being inadequate in specific life domains (Ferrier & Martens, 2008). Perceived incompetence related to ED can be measured in areas such as physical appearance, family, morality and social acceptance, and influence the body image development in young women and hence, cause a higher prevalence of ED (Cash & Deagle, 1997). Some ED researchers (Hinrichsen, Garry, & Waller, 2006; Steiner et al., 2003) suggest that a disordered concept of the *self* as in low self-esteem is a core part of the pathology (Fairburn, Cooper, & Shafran, 2003). Individuals with EDs have high self-standards but consider themselves as unsuccessful in reaching these standards (Westra & Kupier, 1996; Silva, 2007). In terms of self-concept and, in this case,

self-standards, if a person thinks of their 'actual' self differently to how they feel about their 'ideal' self, this discrepancy will lead to emotional vulnerability (Higgins, 1987). Bruch (1973) argued that a deficit in the definition of the self is one of the factors that can lead to ED. The self-standards are often founded around physical appearance and social value (Cash & Deagle, 1997; Dingemans, Spinhoven, & van Furth, 2006).

Appearance body scheme

Eating disorder patients have higher discrepancies than controls between their 'actual' and 'ideal' self in terms of body image appearance (Cash & Deagle, 1997). The body image disturbance is often associated with the severity of the distorted eating (Fernández-Aranda, Dahme, & Meermann, 1999). Two aspects of body image dysfunction are perceptual body-size distortion and body dissatisfaction (Cash & Deagle, 1997). Bulimia nervosa (BN) patients have a higher wish to be thin and have higher body dissatisfaction than anorexia nervosa (AN) patients as well as controls (Cash & Deagle, 1997). However, this is not associated to a distorted body image (Fernández, Probst, Meermann, & Vandereycken, 1994).

Social values

Controlling and perfectionist parents can lead children to expect too much from themselves and develop an ED, which, according to the literature, is developing a sense of the self through self-control (Stein, 1996). High self-standards can therefore lead to maladaptive cognitions affecting body satisfaction and self-esteem (Dobmeyer & Stein, 2003).

Maladaptive parental and peer influences, including criticism or comments related to a child's physical appearance or body weight, can lead to negative body attitudes (Rodgers & Chabrol, 2009). Agras, Bryson, Hammer, and Kraemer (2007) showed that fathers with high body dissatisfaction or high drive for thinness were more likely to have daughters developing an ED, caused by their higher thin body preoccupation (Agras et al., 2007). In other words, young girls with parents who over-control their eating or put pressure to be thin are more likely to develop an ED.

High family standards often reflect sociocultural pressures, including the ideal to be thin (McCarthy, 1990). Various studies (Young, Clopton, & Bleckley, 2004) have shown that if parents highly value success and high social status, this may cause EDs because high social status often involves the ideal to be thin. Moreover, if a child is expected to achieve a physical appearance close to perfection in the parents' eyes, this may also contribute to an ED (Young et al., 2004). Individuals may therefore have misconceptions about what is expected from them because their parents' expectations to be thin and beautiful are too high (Rodgers & Chabrol, 2009). Interestingly, some recent studies (Steiner et al., 2003; Young et al., 2004) contradicted these findings by suggesting that high family standards protects against EDs because they often involve higher family caring, involvement and less psychological distress (Young et al., 2004). This may be true; however, parents that have a high drive for thinness and body dissatisfaction are more likely to project this on their children and encourage them to be thin (Agras et al., 2007).

High imposed standards

According to McClelland (1967), need for achievement, power and affiliation are the main components of human motivation. The need for achieving a set of standards and being successful and, moreover, the difference between people who are motivated to perform high versus low are of value for the present hypothesis. Generally, however, individual achievement and its associations with negative body attitude and eating behaviour are rarely examined (Meyer, Leung, Barry, & De Feo, 2010; Yanover & Thompson, 2008). Presently, models of cognitive aspects of ED tend to focus on distorted cognitions regarding weight, body shape and food but most often leave other core beliefs unexplored (Fairburn, Welch, Doll, Davies, & O'Connor, 1997) such as personal inadequacy and failure to achieve, and can therefore not fully account for the development of an ED (Fairburn et al., 1997).

Even though a considerable amount of work has already been accomplished in the field of individual and social risk factors for ED, it should be noted that previous studies assessing these factors have suffered from various shortcomings in terms of measuring factors concerning family style, family standards and self-standards. Studies have lacked more accurate ways, even if so measured by self-perceived measures, to study the aspects of the self, self-standards and self-perceptions. Moreover, past literature has been limited to studies of EDs in general and their associations to single topics (i.e. self-esteem, specific attitudes) but not to a more comprehensive construct that consider several topics, as in the case of this study.

Aims of the study

After considering the aforementioned shortcomings, the overall aim of the present study was to explore the relevance of social-other and self-standards in a large sample of female ED patients and healthy controls. Our objectives were fourfold: (i) to examine in more detail some of the social-other and self-standards, which may be associated with the development of a subsequent ED; (ii) to assess the level of discrepancies between one's own/others importance given to these factors and their achievement capacity when compared to ED and controls; (iii) to evaluate whether all of the previous objectives differed across ED subtypes; and (iv) and finally, to assess the association between dysfunctional standards and the presence of an ED. We hypothesized that large self-discrepancies in terms of social and self-standards would be specifically related to the development of an ED, when compared with controls, and that the results would be different for different ED subtypes.

Method

Participants

The present study employed a cross-sectional case study design using a retrospective interview. Entry into the study was between March 2001 and September 2006. The sample comprised 240 female ED patients [33.6% AN, 47.2% BN and 19.2% ED not otherwise specified (EDNOS)] and 152 female healthy controls. All clinical participants were diagnosed according to the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR) criteria (APA, 2000), using a semi-structured clinical interview conducted by experienced

clinicians. Clinical participants were consecutive referrals for assessment and treatment at the Department of Psychiatry of the University Hospital of Bellvitge in Barcelona.

The inclusion criteria for the ED sample were as follows: (i) female patients; (ii) over 18 years of age; and (iii) diagnosed with one of the ED disorders: AN, BN or EDNOS according to the criteria of DSM-IV-TR.

Healthy controls were recruited from the same catchment area as the clinical participants and had similar demographic features. The exclusion criteria for the control group were the following: (i) under 18 years old of age and (ii) a history of health or mental illness (including EDs) screened by the General Health Questionnaire-28 (GHQ-28) (Goldberg & Hillier, 1979) and the DSM-IV-TR criteria, respectively (APA, 2000). From an initial recruited sample of 158 controls, six participants who had a lifetime ED were excluded. Ethical approval for the study was obtained from the Ethics Committee of the University Hospital of Bellvitge, and informed consent was obtained from all the participants.

Assessment

The Family Style, Expectations and Independence section of the Cross-Cultural Questionnaire

The Cross-Cultural Questionnaire (CCQ) is a self-report questionnaire that assesses a wide range of factors related to the development and maintenance of ED (childhood eating patterns, meaning and value of food, family style, independence, social and individual standards, and social ideals of thinness and fitness). It was developed by an expert group from various European countries on the basis of the major instruments in the field of EDs, which are the Oxford Risk Factor Interview (Fairburn et al., 1997, 1998; Fairburn, Cooper, Doll, & Welch, 1999) and the McKnight Risk Factor Interview (Shisslak et al., 1999). A more detailed description of the CCQ can be found in earlier publications (Fernández-Aranda et al., 2007; Krug et al., 2008, 2009; Penelo et al., 2011).

The 'Family Style, Expectations and Independence' section used in this study includes three sets relating to social and self-standards. Fifteen life values (intelligence, professional success, independence, education, self discipline, governing own actions, being wife/husband, being mother/father, being homemaker, meeting others' needs, conformity, physical attractiveness, slimness, popularity and physical fitness) are rated in terms of importance for the individual, in terms of success for the individual and in terms of conflict with others. All these items were assessed with a five-point Likert-type scale. The questionnaire can be requested from the corresponding author.

General Health Questionnaire-28 (Goldberg & Hillier, 1979)

The GHQ-28 is a self-report questionnaire measuring psychological well-being. In the current study, the Likert scoring procedure (0–3) was used. An SPSS computer code (IBM Corporation, Somers, NY, USA) was used to score the GHQ-28, which generated new variables. A cut-off score of 6/7 (6=*no case*; 7=*case*) was employed for the new total subscale variables in order to exclude individuals with an elevated likelihood of a present psychiatric disorder. In previous studies, this cut-off score has yielded a sensitivity of 76.9% and a specificity of 90.2% (Molina et al., 2006).

Procedure

All patients were first assessed by experienced psychologists, and psychiatrists conducted a 2-hour structured interview to measure ED symptoms and psychopathological traits. ED diagnoses were based on this interview and were consensually derived among members of the clinical team who had participated in the assessment. Participants completed the questionnaires individually in a room prior to starting the treatment. For the control group, screening for a current or lifetime ED and/or general distress was measured by self-report with the GHQ-28 (Goldberg & Hillier 1979) and ED Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) criteria (APA, 2000). Ethics approval was obtained, and an information sheet at the start of the questionnaire informed the participants about the purpose of the study and assured confidentiality of the results.

Statistical analysis

The statistical analysis was carried out with the PASW 17 (SPSS system). A principal component analysis with direct oblimin rotation for each of the three sets of items (importance for satisfaction, level of success and level of conflict) was conducted separately with the ED cohort. Solutions based on one to five factors were considered to be final candidates. Only components with an eigenvalue higher than 1 were retained, and the Cattell's scree test for the number of factors was applied (Cattell, 1966). A minimum of 50% of the explained variance was required to select a final model, which should also explain a relevant percentage of variance in comparison with the rejected ones. Acceptable factor loading values were considered above 0.30. Furthermore, according to the criterion of parsimony, those solutions that described data in the simplest way were prioritized, and only those dimensions with a clear clinical interpretation were considered. Finally, we examined the factor congruence of the final selected models across the three sets of items through the *c* Tucker's coefficient of congruence (Tucker, 1951). Cronbach's alpha evaluated the internal consistency of the resulting scales.

After selecting the best factor models, scale scores for each dimension were obtained, calculated through the average of the corresponding items. In addition, scores for *self-discrepancy* were calculated as the difference between scores on *importance for satisfaction* and *level of success* on each item.

Scale scores were compared between cases and controls and among ED subdiagnoses with analysis of variance (ANOVA) procedures adjusted by age. The empirical factor scores were entered as independent variables in two binary logistic regressions adjusted by age: the first model included all the scale scores for importance, success and conflict derived from the principal component analysis simultaneously, and the second model also included all the self-discrepancy scale scores simultaneously. The predictive accuracy of both models on the presence of an ED diagnosis was examined with the area under curve of the receiver operating characteristic procedure. The same variables were also included as predictors in two multinomial regressions adjusted by age, and the dependent variable was the ED subtype (reference category: control group). Predictive validity for all regression models was based on Nagelkerke's R^2 coefficient.

Results

Sociodemographical and clinical features

Age did not significantly differ between the ED patients and the controls (ED cohort: $M=24.84$, $SD=5.63$; control group: $M=25.59$, $SD=5.55$; $p=.202$). The body mass index did not differ between both groups (ED cohort: $M=21.29$, $SD=5.23$; control cohort: $M=21.42$, $SD=2.62$; $p=.905$). The mean duration of the ED disorder for the ED cohort was 6.4 years ($SD=4.8$).

Results of the principal component analysis procedure

For each set of items analysed in the study (importance, success and conflict), the final solution included 10 of the initial 15 items. Table 1 contains the rotated factor loadings for the corresponding final solution of each model obtained. One factor, labelled *family standards*, included the items 'being a wife/husband', 'being a mother/father' and 'being a homemaker'. A second factor, labelled *self-achievement*, was associated with the theme of personal and professional success, and included the items 'intelligence', 'independence', 'education' and 'professional success'. Finally, a third factor, labelled *physical appearance*, included the following variables: 'physical attractiveness', 'slimness' and 'physical fitness'. The total variance explained by each model was satisfactory, with values equal to 63.26% (importance), 66.63% (success) and 63.48% (conflict).

There was a constant solution across the three sets of items of importance, level of success and level of conflict. Tucker's congruence index ranged from 0.86 to 0.97 for analogous factor pairs, and it was lower than 0.29 for non-analogous factor pairs.

Internal consistency values ranged from moderate ($\alpha=.64$ for factor 'self-achievement' in the 'level of conflict' model) to high ($\alpha=.80$ for factor 'physical appearance' in the 'level of conflict' model). These results can be valued as especially adequate considering the low number of items retained in the factors (between three and four).

Comparison between cases and controls on social and self-standards scores

Table 2 includes the mean and standard deviation of the derived scores for ED patients (cases) and controls. As mentioned earlier, these scale scores are the mean of the retained items in each factor. In the total sample (Table 2, left), ANOVA comparisons adjusted by age indicated that cases obtained higher scores in *the level of importance given* to several factors to reach life satisfaction, such as *physical appearance* ($p<.001$), *family standards* ($p=.019$) and *self-achievement* ($p=.002$), when compared with controls.

Regarding the *level of success*, cases obtained lower means on *self-achievement* ($p<.001$) than controls. In terms of *level of conflict with significant others*, cases obtained higher means in the three factors: *physical appearance*, *family standards* and *self-achievement* ($p<.001$). For the variable *self-discrepancy (difference between importance given and how successful estimated themselves to achieve them)*, cases obtained lower means in all of the factors: *physical appearance* ($p<.001$), *family standards* ($p<.001$) and *self-achievement* ($p<.001$). In other words, cases estimated themselves as less successful to achieve their social and self-standards than the non-ED group.

Considering the ED subtype (Table 2, right), in the degree of *importance* section, statistical significant differences were observed

Table 1 Rotated (direct oblimin) factor loadings in principal component analysis in the clinical sample ($N=240$)

	Importance			Level of success			Level of conflict		
	F1	F2	F3	F1	F2	F3	F1	F2	F3
Being a wife		**0.81**			**0.85**				**−0.89**
Being a mother		**0.82**			**0.82**				**−0.89**
Being a homemaker		**0.73**			**0.74**				**−0.67**
Intelligence			**0.66**	**0.75**			**0.75**		
Independence			**0.81**	**0.63**	0.43		**0.55**		
Professional success	0.49		**0.40**	**0.77**			**0.88**		
Education			**0.80**	**0.81**			**0.62**		
Physical attractiveness	**0.92**					**−0.84**		**0.80**	
Slimness	**0.90**					**−0.92**		**0.89**	
Physical fitness	**0.50**					**−0.64**	0.41	**0.53**	
Correlations between factors									
F2	0.17			0.14			0.28		
F3	0.31	0.06		−0.30	−0.11		−0.40	−0.27	
Cronbach's alpha (average inter-item correlation if alpha < .70)	0.71	0.72	0.72	0.76	0.76	0.71	0.72	0.64 (0.37)	0.80
Variance explained (KMO)		63.26% (0.74)			66.63% (0.72)			63.48% (0.75)	

Factor loadings < 0.40 (in absolute value) are omitted.
In bold, items retained into the factor.
KMO, Kayser-Meyr-Olkin test.

Table 2 Comparison of empirical factor scores between cases and controls, but also according to eating disorder (ED) subtype

Section	Factor	Total sample (N=392)				ED sample (N=229)					
		Controls (n=152)		ED cases (n=240)		AN (n=77)		BN (n=108)		EDNOS (n=44)	
		Mean	*SD*	Mean	*SD*	Mean	*SD*	Mean	*SD*	Mean	*SD*
Importance for satisfaction	Physical appearance	2.61*	0.66	3.55*	0.86	3.25*	0.85	3.75*	0.74	3.59*	1.01
	Family standards	2.78*	0.83	3.01*	1.01	3.00	1.06	2.99	0.94	3.12	1.04
	Self-achievement	3.81*	0.55	4.01*	0.64	3.92	0.68	4.04	0.60	4.07	0.69
Level of success	Physical appearance	2.53	0.67	2.35	0.94	2.39	0.81	2.26	1.06	2.58	0.87
	Family standards	2.17	1.10	1.94	0.99	1.81	1.01	1.95	0.98	2.26	1.03
	Self-achievement	3.12*	0.57	2.80*	0.80	2.74*	0.68	2.72	0.82	3.06*	0.87
Level of conflict with others	Physical appearance	1.52*	0.64	2.69*	1.04	3.00*	0.99	2.59*	1.08	2.44*	0.88
	Family standards	1.35*	0.53	1.75*	1.02	1.90	1.24	1.72	0.89	1.61	0.95
	Self-achievement	1.58*	0.62	1.95*	0.87	1.98	0.91	2.03	0.87	1.78	0.80
Degree of discrepancy	Physical appearance	0.10*	0.84	1.22*	1.28	0.89*	1.21	1.51*	1.31	1.02*	1.16
	Family standards	0.58*	1.03	1.04*	1.02	1.21	1.22	1.05	0.83	0.62	1.05
	Self-achievement	0.71*	0.68	1.21*	0.90	1.18	0.87	1.31	0.93	1.01	0.90

Results obtained in analysis of variance (ANOVA) procedures adjusted by age.
SD, standard deviation; AN, anorexia nervosa; BN, bulimia nervosa; EDNOS, eating disorder not otherwise specified.
*$p<.05$.

in *physical appearance* between the AN group (showing lower mean scores) and the rest (BN group, $p<.001$; EDNOS group, $p=.031$). For the variable *level of success*, significant differences were observed in the factor *self-achievements* between AN and EDNOS ($p=.036$) groups, BN showing the lowest mean scores. The ANOVA comparisons for the variable *level of conflict* indicated that the AN group presented higher mean scores and obtained statistically significant differences in the factor *physical appearance* when compared with BN ($p=.009$) or EDNOS ($p=.007$). In the *self-discrepancy* variable, BN rated higher than AN ($p=.001$) or EDNOS ($p=.035$) groups in the factor *physical appearance*, and differences were also observed between AN and EDNOS ($p=.025$) group in the factor *family standards*, AN showing the lowest mean scores.

Associations between other and self-standards scores and the presence of an eating disorder diagnosis

Table 3 contains the two binary logistic regression models adjusted by age that valued the predictive accuracy of the scale scores on the presence of an ED. The CCQ model (first model, which included the three-factor measures about *importance*, *success* and *conflict as predictors*) accounted for 54.9% of the variance. In this

Table 3 Predictive accuracy value of empirical factors for an eating disorder

Section	Factor	*p*	*OR*	*CI* 95% *OR*	R^2	H–L	AUC (*CI* 95%)
Importance	Physical appearance	**<.001**	3.06	(1.81; 5.18)	.549	0.938	0.89 (0.85; 0.93)
	Family standards	**.029**	1.71	(1.06; 2.76)			
	Self-achievement	.053	0.53	(0.28; 1.01)			
Success	Physical appearance	.063	0.63	(0.39; 1.02)			
	Family standards	.051	0.64	(0.41; 1.00)			
	Self-achievement	.494	0.82	(0.47; 1.45)			
Conflict	Physical appearance	**<.001**	3.80	(2.31; 6.24)			
	Family standards	.479	0.81	(0.46; 1.44)			
	Self-achievement	.199	1.44	(0.83; 2.51)			
Degree of discrepancy	Physical appearance	**<.001**	2.10	(1.56; 2.83)	.267	0.165	0.78 (0.72; 0.83)
	Family standards	.158	1.23	(0.92; 1.64)			
	Self-achievement	.266	1.25	(0.84; 1.86)			

Binomial logistic regression models. Reference category: controls.
OR, odds ratio; *CI*, confidence interval; AUC, area under curve.
H-L, Hosmer-Lemeshow's test for goodness-of-fit.
In bold, significant coefficients (0.5 level).

Table 4 Predictive accuracy value of empirical factors on an eating disorder subtype

Section	Factor	AN			BN			EDNOS			R^2
		p	*OR*	*CI* 95% *OR*	*p*	*OR*	*CI* 95% *OR*	*p*	*OR*	*CI* 95% *OR*	
Importance	Physical appearance	.054	1.90	(0.99; 3.64)	**<.001**	4.88	(2.62; 9.10)	**.041**	2.25	(1.03; 4.88)	.532
	Family standards	**.037**	1.86	(1.04; 3.33)	.081	1.62	(0.94; 2.80)	.706	1.15	(0.56; 2.37)	
	Self-achievement	.064	0.46	(0.21; 1.05)	**.048**	0.47	(0.23; 0.99)	.600	0.76	(0.28; 2.10)	
Success	Physical appearance	.208	0.69	(0.39; 1.23)	**.025**	0.54	(0.32; 0.93)	.420	0.75	(0.37; 1.51)	
	Family standards	**.023**	0.51	(0.29; 0.91)	.274	0.75	(0.45; 1.25)	.375	0.74	(0.38; 1.45)	
	Self-achievement	.599	0.83	(0.41; 1.67)	.455	0.79	(0.42; 1.47)	.979	1.01	(0.43; 2.37)	
Conflict	Physical appearance	**<.001**	5.84	(3.21; 10.61)	**<.001**	3.02	(1.73; 5.25)	**.001**	3.16	(1.58; 6.31)	
	Family standards	.940	0.98	(0.51; 1.88)	.369	0.75	(0.41; 1.40)	.710	0.86	(0.39; 1.89)	
	Self-achievement	.471	1.28	(0.65; 2.52)	.102	1.68	(0.90; 3.12)	.489	1.32	(0.60; 2.91)	
Degree of discrepancy	Physical appearance	**.024**	1.53	(1.06; 2.22)	**<.001**	2.76	(1.94; 3.93)	**.008**	1.87	(1.17; 2.98)	.280
	Family standards	**.025**	1.52	(1.06; 2.20)	.442	1.15	(0.81; 1.62)	.582	0.87	(0.54; 1.42)	
	Self-achievement	.163	1.42	(0.87; 2.32)	.491	1.17	(0.74; 1.86)	.764	1.10	(0.59; 2.06)	

Multinomial logistic regression models. Reference category: controls.
AN, anorexia nervosa; BN, bulimia nervosa; EDNOS, eating disorder not otherwise specified; *OR*, odds ratio; *CI*, confidence interval.
In bold, significant coefficients (0.5 level).

CCQ model, higher levels of *importance* of *physical appearance*, *conflict with significant others* on their *physical appearance* and *importance of family standards*, and the presence of an ED were related to the presence of an ED. The self-discrepancy model (second model, which included the three self-discrepancy scale scores as predictors) accounted for 26.7% of the variance. A positive relationship was obtained between *physical appearance* and the presence of an ED. In other words, ED cases had greater self-discrepancy regarding their physical appearance and, hence, a greater probability for developing an ED.

Associations between other and self-standards scores and the presence of an eating disorder subtype

Table 4 contains the two multinomial logistic regression models adjusted by age that valued the predictive accuracy of the scale scores on the presence of a concrete ED subtype. The CCQ model accounted for 53.2% of the variance. Higher levels of *importance* of physical appearance increased the probability of BN ($p<.001$) and EDNOS ($p=.041$), with respect to controls. Moreover, the *level of success* regarding physical appearance was negatively related to developing BN ($p=.025$). In addition, higher levels of conflict with physical appearance increased the probability of developing an ED in all of the ED subtypes ($p<.001$). Considering the factor *family standards*, *the level of importance* increased the risk of developing AN ($p=.037$), whereas *the level of success* was negatively related to the presence of AN ($p=.023$). Considering the factor self-achievements, *the level of importance* was negatively related to the development of BN ($p=.048$).

Finally, in the self-discrepancy domain ($R^2=.28$), the factor *physical appearance* was positively related to the probability of presenting AN ($p=.024$), BN ($p<.001$) or EDNOS ($p=.008$), with respect to the control group. Furthermore, higher scores in the factor *family standards* enlarged the probability of developing AN ($p=.025$).

Discussion

In accordance with our hypothesis, we found that people with ED had higher standards for *physical appearance*, *family standards* and *self-achievement* than controls. Furthermore, compared with control patients, ED patients showed higher levels of discrepancy between their values and confidence to attain them and the conflict generated with the significant others. Moreover, high social and self-standards were found to be associated with an increased probability of presenting an ED. Some of them were found to be different among the ED subtypes. Whereas higher self-standards, such as *physical appearance*, were more relevant in BN and EDNOS, higher social-other standards were more associated with AN.

Physical appearance domain

A higher importance of this domain was found in people with ED. This was present across all ED subtypes. However, the BN patients had the highest level of conflict within the family in this domain. The perceived pressure from the family to aspire to a thin body shape and weight has been reported previously (Young et al., 2004). Accordingly, in a previous longitudinal study (Agras et al., 2007), the perceived pressure from fathers to be thin caused their daughters to have higher preoccupation with thinness and social pressure to be thin, hence, higher risk for developing ED. As shown in previous reports (Cash & Deagle, 1997; Fernández-Aranda et al. 1999; Sarwer, Thompson, & Cash, 2005), BN patients have higher body dissatisfaction than other ED subtypes. This is considered to be due to a higher desire to lose weight, and the present results are also in line with previous findings of BN patients, having more difficulties in accepting their body size (Fernández et al., 1994).

Social values domain

Family standards (being a good mother, wife and housemaker) were self-perceived as more important and generated more

conflicts to ED cases than to healthy controls. As reported in previous research (Young et al., 2004), this may represent high standards and expectations as part of obsessive–compulsive personality disorder traits and perfectionism that have been commonly reported in people with ED and their families (Anderluch, Tchanturia, Rabe-Hesketh, & Treasure, 2003; Calvo et al., 2009). Higher levels of importance described to this domain increased the probability of presenting an ED.

Both the results in the physical appearance and social domain are in line with the new concept *perceived incompetence* introduced in the literature (Ferrier & Martens, 2008). The feeling of being inadequate in certain life domains is significantly different between BN and AN in terms of *physical appearance*. Interestingly, however, no significant differences were found among the ED subtypes in the social domain.

In agreement with the present results, previous studies have also demonstrated that high parental expectations may cause children to misconceive what is expected from them and lead to dysfunctional social and self-standards, which in turn may lead to larger *discrepancies* in terms of *self-concept* because of not being able to reach those unrealistic goals (Wade, Gillespie, & Martin, 2007). Frequently, it has been postulated that all of the aforementioned concepts might indirectly be influencing a later development of an ED (Cervera et al., 2003; Karwautz et al., 2001; Rodgers & Chabrol, 2009). However, nor our results or the current research design allows us to analyse in depth this temporal relationship.

Self-achievement domain

As expected, higher importance for *self-achievements* was found in ED than in healthy controls. These values were perceived to generate more conflicts and to be more difficult to reach by ED cases. Accordingly, the literature suggests that individuals with ED tend to expect too much from themselves and, hence, judge themselves as less successful (Westra & Kupier, 1996). To understand this finding, several individual and interpersonal factors, which are being frequently observed in ED, should be considered (Anderluh et al., 2003; Karwautz et al., 2001; Tchanturia et al., 2004; Wade et al., 2007): specific personality traits (such as rigidity, excessive goal orientation, more self-control and lack of flexibility), high parental standards, family overprotection, and so on. Moreover, low self-esteem may play an important role when it comes to self-achievements (Cockerham et al., 2009; Klump et al., 2002) in the sense that low self-esteem is argued to be a reflection of a distorted concept of self >>>(Hinrichsen et al., 2006; Steiner et al., 2003) and, therefore, also a reflection of a distorted view of one's self-achievements.

Self-discrepancy domain

The *self-discrepancy* for *physical appearance* was higher for ED subtypes than controls and was hence associated with a possible ED. The BN group had significantly higher scores than the other subtypes. BN groups' self-discrepancy regarding physical appearance might be higher because of the higher wish to lose weight for BN patients (Fernández-Aranda et al., 1999). Greater body weight may be the reason for a high body dissatisfaction leading to lower body esteem (Gila, Castro, Gómez, & Toro, 2005). Once again, this ties in with the *self-discrepancy theory* and a discrepancy between actual/ideal/ought *self-concept* and the own/others *standpoint* (Higgins, 1987). Apart from *physical appearance*, the factor *family standards* in the self-discrepancy model increased the risk of ED and, specifically, AN. Perhaps, the reason why people with AN experience more discrepancy between the given importance and the level of success of their family is that the severity of AN causes greater family concern that can be misinterpreted as conflictive.

Limitations and strengths of the present study

The present study has some limitations that need to be highlighted. Firstly, the sample sizes for the ED subtypes might have been too small for such comparisons. Secondly, the retrospective and self-reported data collection procedures may have limited the validity and the reliability of our findings, which are subject to unreliability of individual recall. Finally, additional factors could have been considered to obtain more precise results regarding family and self-achievement.

A strength of the study was its aim to explore a topic not previously mentioned by the literature. No past literature has explicitly explored self and social standards as a whole in women with ED to their family, physical appearance and self-values.

Future research could expand these results and explore whether self-standards and the achievement model could be applied and useful for ED. Moreover, longitudinal designs could address self and social standards in the clinical course of EDs and how far those standards are somehow linked to the ED.

Our findings suggest that if clinical treatment of ED aims to address self-standards and self-values, these models may aid in increasing flexibility within one's own self-values, standards and future plans, and furthermore, also to consider emotional and cognitive aspects, as suggested in previous reports (Tchanturia et al., 2004). The models could be applied in cognitive behaviour therapy prevention programmes to increase self-criticism and specific values as well as in family therapy where they could help to inform not only the patient but also his or her significant others on their conditioned self-esteem. Bruch (1973) argued that ED not only is a weight problem but also has to do with 'the person within' and how one feels both physically and mentally about one's self.

In conclusion, the findings from the present study agree with the research underlining the relevance of self-values and self-standards in several domains (regarding oneself, family standards and appearance) in the presence of EDs.

Acknowledgements

Financial support was received from the European Union (Framework—V Multicenter Research Grant, QCK1-1999-916), Fondo de Investigación Sanitaria (PI081573; PI081714) and Agència de Gestió d'Ajuts Universitaris i de Recerca (2009SGR1554; FI-DGR 2008). CIBER Fisiopatología de la Obesidad y Nutrición and CIBER Salud Mental are initiatives of Instituto Salud Carlos III. This work is part of the dissertation of Katarina Gunnard at the University of Barcelona.

REFERENCES

Agras, W. S., Bryson, S., Hammer, L. D., & Kraemer, H. C. (2007). Childhood risk factors for thin body preoccupation and social pressure to be thin. *Journal of the American Academy of Child and Adolescent Psychiatry, 46*, 171–178.

Anderluh, M. B., Tchanturia, K., Rabe-Hesketh, S., & Treasure, J. (2003). Childhood obsessive–compulsive personality traits in adult women with eating disorders: Defining a broader eating disorder phenotype. *The American Journal of Psychiatry, 160*, 242–247.

APA. (2000). DSM-IV-TR: Diagnostic and Statistical Manual of Mental Disorders (4th Ed. Revised). Washington, DC: American Psychiatric Association.

Bruch, H. (1973). Thin fat people. *Journal of American Medical Women's Association, 28*, 187–188.

Calvo, R., Lazaro, L., Castro-Fornieles, J., Font, E., Moreno, E., & Toro, J. (2009). Obsessive–compulsive personality disorder traits and personality dimensions in parents of children with obsessive–compulsive disorder. *European Psychiatry, 24*, 201–206.

Cash, T. F. & Deagle, E.A. (1997). The nature and extent of body-image disturbances in anorexia nervosa and bulimia nervosa: A meta analysis. *International Journal of Eating Disorders, 22*, 108–125.

Cattell, R. B. (1966). The scree test for the number of factors. *Multivariate Behavioral Research, 1*, 245–276.

Cervera, S., Lahortiga, F., Martinez-González, M. A., Gual, P., de Irala-Estévez, J., & Alonso, Y. (2003). Neuroticism and low self-esteem as risk factors for incident eating disorders in a prospective cohort study. *International Journal of Eating Disorders, 33*, 271–280.

Cockerham, E., Stopa, L., Bell, L., & Gregg, A. (2009). Implicit self-esteem in bulimia nervosa. *Journal of Behavior Therapy and Experimental Psychiatry, 40*, 265–273.

Dingemans, A. E., Spinhoven, P., & van Furth, E. F. (2006). Maladaptive core beliefs and eating disorder symptoms. *Eating Behaviors, 7*, 258–265.

Dobmeyer, A. C., & Stein, D. M. (2003). A prospective analysis of eating disorder risk factors: Drive for thinness, depressed mood, maladaptive cognitions, and ineffectiveness. *Eating Behaviors, 4*, 135–147.

Fairburn, C. G. Cooper Z., & Shafran R. (2003). Cognitive behaviour therapy for eating disorders: A "transdiagnostic" theory and treatment. *Behaviour Research and Therapy, 41*, 509–528.

Fairburn, C. G., Cooper, Z., Doll, H. A., & Welch, S. L. (1999). Risk factors for anorexia nervosa: Three integrated case–control comparisons. *Archives of General Psychiatry, 56*, 468–476.

Fairburn, C. G., Doll, H. A., Welch, S. L., Hay, P. J., Davies, B. A., & O'Connor, M. E. (1998). Risk factors for binge eating disorder: A community-based, case–control study. *Archives of General Psychiatry, 55*, 425–432.

Fairburn, C. G., Welch, S. L., Doll, H. A., Davies, B. A., & O'Connor, M. E. (1997). Risk factors for bulimia nervosa. A community-based case–control study. *Archives of General Psychiatry, 54*, 509–517.

Fernández, F., Probst, M., Meermann, R., & Vandereycken, W. (1994). Body size estimation and body dissatisfaction in eating disorder patients and normal controls. *International Journal of Eating Disorders, 16*, 307–310.

Fernández-Aranda, F., Dahme, B., & Meermann, R. (1999). Body image in eating disorders and analysis of its relevance: A preliminary study. *Journal of Psychosomatic Research, 47*, 419–428.

Fernández-Aranda, F., Krug, I., Granero, R., Ramon, J. M., Badia, A., Gimenez, L., Treasure, J. (2007). Individual and family eating patterns during childhood and early adolescence: An analysis of associated eating disorder factors. *Appetite, 49*, 476–485 doi:10.1002/cpp.728.

Ferrier, A. G., & Martens, M. P. (2008). Perceived incompetence and disordered eating among college students. *Eating Behaviors, 9*, 111–119.

Gila, A., Castro, J., Gómez, M. J. and Toro, J. (2005). Social and body self-esteem in adolescents with eating disorders. *International Journal of Psychology and Psychological Therapy, 1*, 63–71.

Goldberg, D. P., & Hillier, V. F. (1979). A scaled version of the General Health Questionnaire. *Psychological Medicine, 9*(1), 139–145.

Hinrichsen, H., Garry, J., & Waller, G. (2006). Development and preliminary validation of the testable assumptions questionnaire—Eating disorders (TAQ-ED). *Eating Behaviors, 7*, 275–281.

Higgins, E. T. (1987). Self-discrepancy: A theory relating self and affect. *Psychological Review, 94*, 319–340.

Jacobi, C., Hayward, C., de Zwaan, M., Kraemer, H. C., & Agras, W. S. (2004). Coming to terms with risk factors for eating disorders: Application of risk terminology and suggestions for a general taxonomy. *Psychological Bulletin, 130*, 19–65.

Karwautz A, Rabe Hesketh, S., Hu X, Zhao J, Sham P, Collier DA, & Treasure JL. (2001). Individual-specific risk factors for anorexia nervosa: A pilot study using a discordant sister-pair design. *Psychological Medicine 31*, 317–329.

Klump, K. L., Wonderlich, S., Lehoux, P., Lilenfeld, L. R., & Bulik, C. M. (2002). Does environment matter? A review of nonshared environment and eating disorders. *International Journal of Eating Disorders, 31*(2), 118–135.

Krug, I., Bulik, C. M., Vall-Llovera, O. N., Granero, R., Aguera, Z., Villarejo, C., Fernández-Aranda, F. (2008). Anger expression in eating disorders: Clinical, psychopathological and personality correlates. *Psychiatry Research, 161*, 195–205.

Krug, I., Treasure, J., Anderluh, M., Bellodi, L., Cellini, E., Collier, D.,Fernández-Aranda, F. (2009). Associations of individual and family eating patterns during childhood and early adolescence: A multicentre European study of associated eating disorder factors. *British Journal of Nutrition, 101*(6), 909–918.

Mazzeo, S. E., Mitchell, K. S., Bulik, C. M., Aggen, S. H., Kendler, K. S., & Neale, M. C. (2010). A twin study of specific bulimia nervosa symptoms. *Psychological Medicine, 40*, 1203–1213.

McCarthy, M. (1990). The thin ideal, depression and eating disorders in women. *Behaviour Research and Therapy, 28*, 205–215.

McClelland, D. C. (1967). *Achieving Society*. New York: Free Press.

Mendelson, B. K., McLaren, L., Gauvin, L., & Steiger, H. (2002). The relationship of self-esteem and body esteem in women with and without eating disorders. *International Journal of Eating Disorders, 31*, 318–323.

Meyer, C., Leung, N., Barry, L., & De Feo, D. (2010). Emotion and eating psychopathology: Links with attitudes toward emotional expression among young women. *International Journal of Eating Disorders, 43*, 187–189.

Molina, J. D., Andrade-Rosa, C., Gonzalez-Parra, S., Blasco-Fontecilla, H., Real, M. A., & Pintor, C. (2006). The factor structure of the General Health Questionnaire (GHQ): A scaled version for general practice in Spain. *European Psychiatry, 21*, 478–486.

Penelo, E., Granero, R., Krug, I., Treasure, J., Karwautz, A., Anderluh, M., Fernández-Aranda, F. (2011). Factors of risk and maintenance for eating disorders: Psychometric exploration of the cross-cultural questionnaire (CCQ) across five European countries. *Clinical Psychology & Psychotherapy*. doi:10.1002/cpp.728

Rodgers, R., & Chabrol, H. (2009). Parental attitudes, body image disturbance and disordered eating amongst adolescents and young adults: A review. *European Eating Disorders Review, 17*, 137–151.

Sarwer, D. B., Thompson, J. K., & Cash, T. F. (2005). Body image and obesity in adulthood. *Psychiatric Clinics of North America, 28*(1), 69–87, viii.

Shisslak, C. M., Renger, R., Sharpe, T., Crago, M., McKnight, K. M., Gray, N., Taylor, C.B. (1999). Development and evaluation of the McKnight Risk Factor Survey for assessing potential risk and protective factors for disordered eating in preadolescent and adolescent girls. *International Journal of Eating Disorders, 25*, 195–214.

Silva, A. S. (2007). The relationship between personality traits and eating pathology in adolescent girls. *Archives of Women's Mental Health, 10*:285–292.

Silvera, D. H., Bergersen, T. D., Bjorgum, L., Perry, J. A., Rosenvinge, J. H., & Holte, A. (1998). Analyzing the relation between self-esteem and eating disorders: Differential effects of self-liking and self-competence. *Eating and Weight Disorders, 3*, 95–99.

Stein, K. F. (1996). The self-schema model: A theoretical approach to the self-concept in eating disorders. *Archives of Psychiatric Nursing, 10*, 96–109.

Steiner, H., Kwan, W., Shaffer, T. G., Walker, S., Miller, S., Sagar, A., et al. (2003). Risk and protective factors for juvenile eating disorders. *European Child & Adolescent Psychiatry, 12*, I38-I.

Tchanturia, K., Anderluh, M. B., Morris, R. G., Rabe-Hesketh, S., Collier, D. A., Sanchez, P., et al. (2004). Cognitive flexibility in anorexia nervosa and bulimia nervosa. *Journal of International Neuropsychological Society, 10*, 513–520.

Troop, N. A., Allan, S., Treasure, J. L., & Katzman, M. (2003). Social comparison and submissive behaviour in eating disorder patients. *Psychology and Psychotherapy, 76*, 237–249.

Tucker, L. R. (1951). A method for synthesis of factor analysis studies. *Personnel Research Section Report, 984*.

Wade, T. D., Gillespie, N., & Martin, N. G. (2007). A comparison of early family life events amongst monozygotic twin women with lifetime anorexia nervosa, bulimia nervosa, or major depression. *International Journal of Eating Disorders, 40*, 679–686.

Westra, H. A., & Kupier, N. A. (1996). Communality and specificity of dysfunctional cognition and the prediction of four different forms of psychological maladjustment. *Personality and Individual Differences, 20*, 575–588.

Yanover, T., & Thompson, J. K. (2008). Eating problems, body image disturbances, and academic achievement: Preliminary evaluation of the eating and body image disturbances academic interference scale. *International Journal of Eating Disorders, 41*, 184–187.

Young, E. A., Clopton, J. R., & Bleckley, M. K. (2004). Perfectionism, low self-esteem, and family factors as predictors of bulimic behavior. *Eating Behaviors, 5*, 273–283.

10.2 Study 2

SUBTYPING EATING DISORDERED PATIENTS ALONG DRIVE FOR THINNESS AND DEPRESSION

Abstract

Subtyping individuals who binge eat by "diet-DT" and "depression" has yielded two valid and clinically useful subtypes that predict eating severity, comorbid psychopathology and outcome. The present study aimed to find four subtypes based on these dimensions and test their validity. Besides, it explored the distribution of eating disorder (ED) diagnoses across subtypes given their known heterogeneity, crossover and binge-eating fluctuation.

Cluster-analysis grouped 1005 consecutively admitted ED adult women into four subtypes, those previously described ''DT'' (22%), ''DT-depressive'' (29%), and ''mild DT'' (25%) and ''depressive-moderate DT'' (24%). Overall ''mild DT'' presented lower and ''DT-depressive'' greater eating and comorbid psychopathology than the rest, whereas "pure DT" and "depressive-moderate DT" presented no differences on bulimic symptoms but in psychopathology ($p<.01$). Finally, while BN-P patients were mostly and similarly distributed in the "DT" and "DT-depressive" subtypes than in the other, AN were in the new "mild DT" and "depressive-moderate DT" ($p<.01$). However, BN-NP, BED and EDNOS were similarly represented across subtypes.

Results are discussed with regard to 1) the newly emerged subtypes that may explain cases in which DT prevents or does not predict binge eating; 2) the confluence of DT-depression that signaled greater eating and comorbid pathology, particularly self-control problems; 3) ED-DSM-diagnostic criteria.

Behaviour Research and Therapy 47 (2009) 513–519

Contents lists available at ScienceDirect

Behaviour Research and Therapy

journal homepage: www.elsevier.com/locate/brat

Subtyping eating disordered patients along drive for thinness and depression

E. Peñas-Lledó [a,b], F. Fernández-Aranda [a,c,*], S. Jiménez-Murcia [a,c], R. Granero [d], E. Penelo [d], A. Soto [a], K. Gunnard [a], J.M. Menchón [a,e]

[a] Department of Psychiatry, University Hospital of Bellvitge, Barcelona, Spain
[b] University of Extremadura Medical School, University Hospital Clinical Research Center (CICAB), Spain
[c] CIBER Fisiopatología Obesidad y Nutrición (CIBERObn), Instituto Salud Carlos III, Spain
[d] Laboratori d'Estadística Aplicada, Departament de Metodologia, Universitat Autònoma de Barcelona, Spain
[e] CIBER Salud Mental (CIBERSAM), Instituto Salud Carlos III, Spain

ARTICLE INFO

Article history:
Received 6 November 2008
Received in revised form
4 March 2009
Accepted 13 March 2009

Keywords:
Subtyping
Eating disorders
Diet
Negative affect
Depression
Drive for thinness

ABSTRACT

Subtyping individuals who binge eat by "diet-DT" and "depression" has yielded two valid and clinically useful subtypes that predict eating severity, comorbid psychopathology and outcome. The present study aimed to find four subtypes based on these dimensions and test their validity. Besides, it explored the distribution of eating disorder (ED) diagnoses across subtypes given their known heterogeneity, crossover and binge-eating fluctuation.

Cluster analysis grouped 1005 consecutively admitted ED adult women into four subtypes, those previously described "DT" (22%), "DT-depressive" (29%), and "mild DT" (25%) and "depressive-moderate DT" (24%). Overall "mild DT" presented lower and "DT-depressive" greater eating and comorbid psychopathology than the rest, whereas "pure DT" and "depressive-moderate DT" presented no differences on bulimic symptoms but in psychopathology ($p < .01$). Finally, while BN–P patients were mostly and similarly distributed in the "DT" and "DT-depressive" subtypes than in the other, AN were in the new "mild DT" and "depressive-moderate DT" ($p < .01$). However, BN–NP, BED and EDNOS were similarly represented across subtypes.

Results are discussed with regard to 1) the newly emerged subtypes that may explain cases in which DT prevents or does not predict binge eating; 2) the confluence of DT-depression that signaled greater eating and comorbid pathology, particularly self-control problems; 3) ED-DSM-diagnostic criteria.

Introduction

Binge-eating behavior is the most common criterion across eating disorder (ED) diagnostic categories with the exception of the comparatively small number of restrictive anorexia nervosa patients (AN–R). However, even in AN–R, there is a strong likelihood that they end up crossing to another eating disorder diagnostic category over time (e.g., Eddy et al., 2008, 2002), which puts into question the clinical utility and validity of the current scheme established in the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV, American Psychological Association). Existing concerns about the validity of current DSM diagnoses could be partially remedied if the DSM were used in conjunction with alternative subtyping schemes that prove clinical utility in predicting features such as risk of binge-eating and related pathology. For example, Stice's etiologic and maintenance model of binge eating (Stice, 2001), which posits the importance of two factors, dietary restraint and affect dysregulation, has received extensive support. Cluster analytic studies have consistently and reliably yielded two "dietary" subtypes, a pure "dietary" and a mixed "dietary-depressive", in clinical populations of children with loss of control over eating (Goldschmidt et al., 2008), adolescent females with Bulimia Nervosa (BN) or eating disturbances (Chen & Le Grange, 2007; Grilo, 2004), and adult women with BN (Grilo, Masheb, & Berman, 2001; Stice & Fairburn, 2003) or binge-eating disorder (BED) (Grilo, Masheb, & Wilson, 2001; Stice et al., 2001). In addition, this subtyping scheme has been replicated in non-clinical undergraduate females showing that it is also useful to capture individuals at risk of binge-eating and related behaviors (Peñas-Lledó, Loeb, Puerto, Hildebrandt, & Llerena, 2008). The "dietary-depressive" type appears representative of about one third of ED patients and signals not only greater binge-eating severity, but also

* Corresponding author. Department of Psychiatry, University Hospital of Bellvitge, and CIBEROBN, c/ Feixa Llarga s/n, 08907 Barcelona, Spain. Tel.: +34 93 2607227; fax: +34 93 2607193.
E-mail address: ffernandez@bellvitgehospital.cat (F. Fernández-Aranda).

0005-7967/$ – see front matter © 2009 Elsevier Ltd. All rights reserved.
doi:10.1016/j.brat.2009.03.003

greater comorbid psychopathology and a poorer outcome than the other.

However, there is evidence that indirectly supports that two other differentiated groups could emerge from this "dietary"–"depression" subtyping scheme to predict severity of bulimic and comorbid psychopathology. Firstly, dietary restraint may not be a necessary precursor of binge eating for a percentage of BN (Bulik, Sullivan, Carter, & Joyce, 1997; Haiman & Devlin, 1999; Pederson Mussell et al., 1997; Vanderlinden et al., 2004) and BED (Grilo & Masheb, 2000) patients. Then, it is likely to assume that these individuals might be categorized within a third subtype characterized mostly by "depressive" pathology in confluence with "mild to moderate dietary restraint" levels, which may have appeared later to avoid consequent binge eating related weight gain (Stice, 1998). This hypothesized subtype might be similar to the "dietary" subtype with regard to binge eating but more severe than this one in relation to comorbid psychopathology since BED women with mild dietary restraint scores and depression presented more comorbid psychopathology but no differences in frequency of subjective binge eating than those in the dietary group (Stice et al., 2001). Secondly, successful dietary restraint (high restraint accompanied by a 10% decrease in body weight) shows a protective effect against binge-eating and related psychopathology including depression (Stice, Martinez, Presnell, & Groesz, 2006). By extension, traditional dietary restraint scales do not appear to correlate with restriction of energy intake (Stice, Fisher, & Lowe, 2004) but with weight gain (Stice, 2001). In keeping with, the Eating disorder Inventory (EDI; Garner, 1998) drive for thinness (DT) scale (Ricciardelli & McCabe, 2001), which has been also used to test Stice's model due to its high correlation with common dietary restraint measures (Williamson, Barker, Bertman, & Gleaves, 1995), appears to measure preoccupation with weight. A fear of weight gain, a diagnostic criterion for anorexia nervosa (AN) also met by many ED patients, leads to the consequent drive for and pursuit of thinness. However, previous evidence suggests that DT may not apply to those ED individuals that are not preoccupied with weight possibly because they are as thin as they desire and present a successful history at maintaining such thinness. In support of it there are studies showing ED patients without drive for thinness, mostly AN that have less pathology and a more self-directive character (Abbate-Daga, Pierò, Gramaglia, Gandione, & Fassino, 2007; Ramacciotti et al., 2002). Therefore, a fourth cluster might be expected from the present subtyping scheme consisting of low scores on both DT and depression, which it will be characterized by lower bulimic and related psychopathology as well as a stronger character (self-directedness) than the abovementioned subtypes.

The present study firstly examines if a large population of ED patients can be categorized into four different subtypes along drive for thinness and depression: the two "dietary" types previously found, "pure DT" and "DT-depressive", as well as two other characterized by lower scores on DT, "mild DT" and "depressive-mild/moderate DT". Secondly, it analyses the validity of this subtyping scheme by comparing these subtypes on different measures of bulimic behaviors, eating and comorbid psychopathology. Finally, it explores if there are differences in the distribution of DSM-ED diagnoses types across these newly emerged empirical subtypes in order to further understand ED within-diagnostic heterogeneity and crossover.

Methods

Participants

All case reports from female patients consecutively admitted to the Outpatient Clinic of the Eating Disorders Unit in the Department of Psychiatry at the University Hospital of Bellvitge, between January-2002 and December-2006, that completed the relevant measures considered for the present study were included. The final sample included 1005 female patients who met DSM-IV criteria for an ED (American Psychiatric Association, 2000) as determined by an SCID-I (First, Spitzer, Gibbon, & Williams, 1997) conducted by experienced research clinicians. Of these, 114 were AN–R, 80 anorexia nervosa-binge-eating/purging (AN–BP), 450 BN-Purging (BN–P), 54 BN-Non Purging (BN–NP), 251 EDNOS and 56 BED. The mean age of the participants was 26.1 years (SD = 7.3). The mean age of onset of the eating disorder was 19.3 yr (SD = 6.4) and the mean duration was 6.9 yr (SD = 5.8). The Ethics Committee of our Institution approved this study and informed consent was obtained from all participants.

Measures

Weekly binge-eating and purging frequencies

Throughout the duration of the study, patients kept a food diary (Fernandez-Aranda & Turon, 1998), which also recorded episodes of binge eating and purging. Patients were trained by the therapists on the fulfillment of these diaries on a previous session before starting treatment. Weekly binge and purge frequency was determined by examination of the food diaries by the assessing clinicians by face to face interviews.

Eating Disorders Inventory-2 (EDI-2; Garner, 1991)

This is a 91-item multidimensional self-report questionnaire that assess characteristics related to AN, and BN disorders subdivided into 11 different subscales: drive for thinness (DT), bulimia, body dissatisfaction, ineffectiveness, perfectionism, interoceptive awareness, interpersonal distrust, maturity fears, social insecurity, impulsivity and ascetism. The Spanish version of the EDI-2 has shown good psychometric properties (Garner, 1998). *The scores on the DT subscale* that specifically looks at preoccupation with weight were submitted to cluster analysis. This scale has been useful for differentiating clinical and non-clinical groups. A cut-off score of 14 in this subscale has been used to detect individuals at risk of an eating disorder (Garner, Olmsted, Polivy, & Garfinkel, 1984).

Symptom Check-List revised (SCL-90-R; Derogatis, 1983)

This questionnaire is widely used for the measurement of self-reported overall psychological distress and psychopathology. It is comprised of 90 items, each rated on a five-point scale of distress. The Global Severity Index (GSI), which is a widely used as an overall measure of distress, was used for the present study. The Spanish version of the SCL-90-R has shown good psychometric properties (González de Rivera, 2001). Additionally, the scores on the SCL subscale of Depression were submitted to cluster analysis. This scale highly correlates ($r = .89$) with another common measure of depression, the Beck Depression Inventory (Steer, Ball, Ranieri, & Beck, 1997). The depression subscale has been shown useful to differentiate non-clinical, mild to moderate depression (scores from 1 to 2) from severe depression (scores greater than 2) (Aben, Verhey, Lousberg, Lodder, & Honig, 2002; Walker et al., 2000).

Eating Attitudes Test (EAT-40; Garner & Garfinkel, 1979)

This questionnaire contains 40 items, including symptoms and behaviors common to individuals with AN, and provides a global index of the severity of the disorder. The higher the scores, the more disturbed the eating behavior. The Spanish version of this questionnaire has shown good psychometric properties (Castro, Toro, Salamero, & Guimerá, 1991).

Bulimic Investigatory Test Edinburgh (BITE; (Henderson & Freeman, 1987))

This questionnaire contains 33 items that measure presence and severity of bulimic symptoms. There are two subscales: the symptomatology scale (30 items), that determines the seriousness of the symptoms, and the severity scale (3 items) that offers a severity index (i.e., the higher the scores, the greater the severity). The Spanish translation of this questionnaire has shown good psychometric properties (Rivas, Bersabé, & Jiménez, 2004).

Social Avoidance Distress Scale (SADS; Watson & Friend, 1969)

This 28-item scale was designed to measure the degree of distress, discomfort, anxiety, and avoidance of social situations. Higher scores indicate greater social avoidance and distress. The Spanish version of the present scale has shown good psychometric properties (Bobes et al., 1999).

Temperament and Character Inventory–revised version-(TCI-R; Cloninger, 1999)

The TCI-R is a 240-item, five-point Likert scale, questionnaire that measures, as in the original TCI version (Cloninger, 1987), seven dimensions of personality: four temperament (Harm Avoidance, Novelty Seeking, Reward Dependence and Persistence) and three character dimensions (Self-Directedness, Cooperativeness and Self-Transcendence). The Spanish version of the original questionnaire and the revised version (Gutiérrez-Zotes et al., 2004) have both shown good psychometric properties.

Evaluation of lifetime substance use and suicidal behavior: Lifetime alcohol and drug abuse was assessed by using the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I) (First et al., 1997). Suicidal behavior and ideation were assessed by structured clinical face to face interview. The time frame for these questions was lifetime. A suicide attempt was defined as a self-destructive act with some degree of intent to end one's life.

Statistical analysis

Analyses were carried out with SPSS 15.0.1 for Windows. With the aim to verify if the two previously described "dietary" subtypes coexist with two other characterized by "mild DT", a cluster analyses was carried out based on scores in the EDI-II Drive for Thinness (DT) subscale and the SCL-90-R Depression scale. The Two Step-Cluster procedure was used, which creates empirical groups based on a nearness criterion into a hierarchical agglomerative clustering (Fraley & Raftery, 1998; Theodoridis & Koutroumbas, 1999). In this study, the distance measure was likelihood function and it was selected the normal density for continuous variables due the metrical scale of income variables. The best cluster solution was selected between the results obtained automatically by the system and other solutions based either on a fewer or a larger number of groups. The comparison of different groupings was based on clinical criteria with the aim to obtain the best final classification with a clear theoretical interpretation and to prevent for the superposition of patterns.

Next, analysis of variance (ANOVA) and chi-square tests were carried out to compare the empirical derived subtypes on clinical phenotypes (income variables of cluster analysis, frequency of bulimic behaviors, eating related pathology, comorbid psychopathology and personality characteristics) and on outcome measuring the response to treatment. Effect size and association measures were based on eta-squared in ANOVA procedures (for quantitative criteria) and odds ratios coefficients and Nagelkerke's R^2 in logistic regressions (for binary criteria). Type-I error inflation was controlled through Finner's adjustment (Domènech, 2008), a sequential procedure to adjust the p-values to control the FamilyWise Error Rate (FWER) while retaining better power than Bonferroni's method (Brown & Russell, 1997).

Results

Cluster analyses: subtypes along drive for thinness and depression

Table 1 shows the results obtained for the four-factor solution in cluster analyses. The empirical groups correspond to the two previously described "dietary restrained" subtypes, "pure DT" ($n = 220$, 22% of the sample) and "DT-depressive" ($n = 290$, 29%), as well as two other new grouping (1 and 3), the "mild DT" ($n = 253$, 25%) and the "depressive-moderate DT" ($n = 242$, 24%) subtypes. The former two subtypes endorsed similar and higher DT over the cut-off score of 14, which is considered of clinical significance (Garner et al., 1984), than the latter groups, whose scores were within the range of normality with "mild" or "moderate" risk. Additionally, the "DT-depressive" subtype reported more depressed mood than the "depressive-moderate DT" type. These two types had more depression (severe depression over the cut-off score of 2) than the other two groups (that had a mean score within the range of mild to moderate depression). However, the groups with a mild to moderate depressive level could be also considered of clinical relevance and to cause some distress and functional impairment.

Subtype comparisons on sociodemographic, eating and general pathology

Table 1 shows all variables that presented significant effects from this subtyping scheme. It also shows significant differences between subtypes, which are hereby summarized.

The "DT-depressive" subtype vs. the other subtypes

The "DT-depressive" subtype showed greater severity of binge-eating behavior than the rest of subtypes. Similarly, it showed greater scores of eating pathology on all dimensional measures and of general psychopathology in most measures including alcohol abuse but social anxiety and dysfunction. Additionally, it is highlighted that the confluence of DT and depression was in particular related to self-control problems such as greater EDI-ineffectiveness and impulsivity, and lower interoceptive awareness and TCI-R self-directedness than the rest.

The new "mild DT" subtype vs. the other subtypes

The "mild DT" subtype showed in general lower scores than the rest in most measures. In particular with regard to eating variables, it showed lower current and past minimum BMI as well as a greater percent of women with history of anorexia nervosa than the other types. Additionally, the "mild DT" had a lower percent of women who engaged in binge-eating and purging behaviors. However, in those who did these behaviors, there were no differences between the "mild DT" and "pure DT" group in binge eating, vomiting or laxative use frequency. Finally, it showed lower general psychopathology and percent of women with suicide ideation, and higher self-directedness than the rest.

The new "depressive-moderate DT" vs the "pure DT" subtype

These subtypes did not differ in age of onset, current BMI, maximum or minimum BMI and years of evolution. However, the "depressive-moderate DT" subtype presented a greater percent of women with both history of AN and current obesity than the "pure DT" type, which suggests greater weight gain. In addition, these subtypes did not differ in the percent of women who engaged in binge eating and purging as well as in the frequency of use of

Table 1
Differences between empirical clusters based on EDI-Drive for Thinness (DT) and SCL-90-R Depression (Dep).

	Mean (SD) for quantitative criteria and percentage for binary									Comparison between clusters
	Mild (1) (N = 253)		Pure DT (2) (N = 220)		Dep-ModDT (3) (N = 242)		DT-Dep (4) (N = 290)		[a]p-value/[b]Effect size	Contrasts
EDI-II - Drive for Thinness (DT)	4.79	(3.62)	17.7	(2.33)	11.8	(3.03)	18.3	(1.93)	<.005/.796	1 < 3<(2 = 4)
SCL-90-R Depression (Dep)	1.53	(.78)	1.57	(.52)	2.71	(.47)	3.10	(.39)	<.005/.612	(1 = 2)<3 < 4
Demographic & Clinical Variables										
Age	26.5	(7.71)	24.9	(7.74)	27.0	(7.25)	25.9	(6.59)	.013/.011	2 < 3
Age onset	20.2	(6.62)	18.7	(6.59)	20.0	(7.02)	18.4	(5.29)	.005/.015	1 > 4
Evolution (Years)	6.43	(5.59)	6.10	(5.49)	7.02	(5.84)	7.65	(6.03)	.021/.11	2 < 4
Current BMI	20.7	(6.67)	22.7	(4.91)	22.9	(7.52)	23.5	(5.82)	.001/.028	1<(2 = 3 = 4)
% of current obesity (BMI>30)	10.2%		7.3%		18.1%		13.5%		.005/.027	1 < 3; 2 < 3; 2 < 4
Maximum BMI	24.7	(6.40)	25.9	(5.86)	27.1	(6.96)	27.7	(6.30)	<.005/.032	1 < 3; 1 < 4; 2 < 4
Minimum BMI	17.7	(3.48)	19.1	(3.20)	18.7	(4.19)	19.1	(3.08)	<.005/.027	1<(2 = 3 = 4)
% of patients with previous AN	55.8%		25.6%		45.7%		30.4%		<.005/.079	1 > 3>(2 = 4)
Eating Related Psychopathology										
% of patients with binge eating	46.8%		73.2%		70.1%		79.8%		<.005/.096	1 < 2; 1 < 3<4
Frequency Binge Eating	3.04	(5.30)	4.64	(6.55)	4.86	(6.34)	6.54	(7.80)	<.005/.036	1 < 3<4; 2 < 4
% of patients with vomits	43.9%		65.6%		56.7%		69.8%		<.005/.055	1 < 2; 1 < 3<4
Frequency Vomit	3.41	(6.44)	5.43	(7.58)	5.09	(8.24)	6.75	(8.38)	<.005/.025	1 < 4
% of laxatives users	11.8%		27.9%		32.9%		40.9%		<.0001/.088	1 < 2<4; 1 < 3
Frequency Laxatives	1.42	(6.57)	3.16	(9.74)	3.53	(8.42)	5.48	(10.83)	<.005/.026	1 < 4
% of diuretics users	1.7%		15.3%		8.2%		18.1%		<.0001/.101	1 < 3<(2 = 4)
Frequency Diuretics	.21	(1.97)	1.94	(6.44)	.91	(4.33)	2.42	(7.84)	<.005/.024	1 < 2; 1 < 4; 3 < 4
BITE – Severity	5.92	(5.19)	12.1	(6.92)	11.1	(6.49)	14.8	(7.41)	<.005/.202	1<(2 = 3)<4
BITE – Symptoms	14.3	(8.11)	21.8	(5.93)	20.9	(5.99)	23.4	(5.65)	<.005/.225	1 < 2; 1 < 3<4
EAT-40	28.0	(14.7)	54.5	(16.5)	50.0	(16.9)	63.5	(18.1)	<.005/.390	1 < 3<2 < 4
EDI-II-Body Dissatisfaction	9.41	(6.31)	18.8	(6.67)	15.7	(6.99)	22.1	(5.48)	<.005/.365	1 < 3<2 < 4
EDI-II-Interoceptive Awareness	5.83	(4.29)	10.9	(5.78)	12.8	(5.25)	16.2	(5.97)	<.005/.341	1 < 2<3 < 4
EDI-II-Bulimia	3.40	(4.26)	7.50	(5.35)	7.44	(5.25)	10.1	(5.79)	<.005/.185	1<(2 = 3)<4
EDI-II-Interpersonal Distrust	4.45	(3.76)	5.50	(4.56)	6.52	(4.35)	7.68	(4.92)	<.005/.072	1 < 3<4; 2 < 4
EDI-II-Ineffectiveness	6.06	(4.59)	9.01	(5.58)	12.2	(5.99)	17.0	(6.00)	<.005/.363	1 < 2<3 < 4
EDI-II-Maturity Fears	5.95	(4.13)	6.77	(5.12)	9.01	(5.35)	10.7	(6.40)	<.005/.113	(1 = 2)<3 < 4
EDI-II-Perfeccionismo	3.57	(3.70)	5.00	(3.99)	5.84	(4.05)	7.59	(4.75)	<.005/.116	1<(2 = 3)<4
EDI-II-Impulsivity	3.13	(3.59)	5.72	(4.97)	8.04	(5.34)	11.5	(6.25)	<.005/.273	1 < 2<3 < 4
EDI-II-Ascetism	3.65	(2.77)	6.85	(3.44)	7.32	(3.73)	10,16	(3.93)	<.005/.317	1<(2 = 3)<4
EDI-II-Social Insecurity	5.63	(4.16)	6.67	(4.50)	9.04	(4.81)	11,19	(4.34)	<.005/.200	(1 = 2)<3 < 4
General Psychopathology										
SCL-90-R: GSI	1.16	(.64)	1.32	(.48)	2.08	(.55)	2.51	(.48)	<.005/.522	1 < 2<3 < 4
SADS-Social Anxiety	10.7	(7.56)	12.7	(7.94)	16.5	(7.05)	18.4	(7.05)	<.005/.147	(1 = 2)<(3 = 4)
% of alcohol consumption		8.5%		7.6%		10.0%		21.2%	<.005/.052	(1 = 2 = 3)<4
% of suicide ideation		27.4%		37.9%		52.1%		70.8%	<.005/.146	1 < 2<3 < 4
% of suicide attempts		12.8%		15.6%		25.4%		33.7%	<.005/.063	(1 = 2)<3 < 4
Degree Social Dysfunction (0-8)	3.99	(2.61)	4.28	(2.52)	5.27	(2.26)	5.81	(2.08)	<.005/.091	(1 = 2)<(3 = 4)
Personality										
TCI-R: Harm-avoidance	106.7	(17.4)	110.1	(18.3)	121.4	(17.1)	128.6	(17.0)	<.005/.206	(1 = 2)<3 < 4
TCI-R: Self-directedness	129.5	(20.3)	121.0	(19.7)	112.5	(15.8)	100.7	(16.9)	<.005/.270	1 > 2>3 > 4
TCI-R: Cooperativeness	137.7	(14.9)	136.3	(17.5)	133.3	(17.7)	130.8	(20.6)	<.005/.023	1 > 4; 2 > 4

[a] *p*-value (ANOVA and χ^2 tests) including Finner's adjustment.
[b] Eta-square (ANOVA, quantitative criteria) and Nagelkerke's R^2 (logistics, binary criteria). Note: BMI: Body Mass Index (Weight (Kg)/Height 2 (m2); EDI: Eating Disorders Inventory; SCL-90-R: Symptom Check-List revised; SADS: Social Avoidance Distress Scale; TCI-R: Temperament and Character Inventory-Revised).

bulimic behaviors or attitudes such as those measured by the scales of the "BITE" and "EDI-Bulimia".

Nevertheless, while the "depressive-moderate DT" showed lower scores than the "pure DT" subtype on the EAT-40 and EDI-Body Dissatisfaction measures, it presented greater levels of psychopathology on the EDI (interceptive awareness, ineffectiveness, impulsivity, maturity fears and social insecurity), SCL-90-R, SADS, social dysfunction, suicide ideation and attempts, and on the personality traits of harm avoidance and lower self-directedness.

Finally, the dimension of depression appeared particularly linked to comorbid psychopathology, in particular to maturity fears, social insecurity, TCI-R harm avoidance and suicide attempts.

Distribution of DSM-eating disorder diagnostic types across subtypes

Significant differences appeared with regard to representation of diagnostic types across the different empirical clusters as shown in Table 2. Most AN–R women were in the "mild DT" subtype than in the rest ($p < .001$). Also, AN–R were more in the "depressive-moderate DT" than in the "pure DT" ($p = .01$) and "DT-depressive" ($p < .05$). AN–BP were mostly located in the "mild DT" and "depressive-moderate DT" than in the rest ($p < .01$) but there were no differences between them ($p = .57$). BN–P were mostly located in "pure DT" and "DT-depressive" than in the rest ($p < .001$) with no differences between them either. The rest were similarly distributed across cases.

Discussion

The current study provides further support for the reliability and validity of the two dietary clusters yielded by the dietary-depressive subtyping model of eating pathology. Moreover, in the present study, an extension of this model to four subtypes is proposed in order to account for those cases in which dieting may

Table 2
Distribution of ED-subtypes and treatment results across empirical clusters.

Eating disorder subtype ($N = 1005$)	Mild DT (1)	Pure DT (2)	Dep-ModDT (3)	DT-Dep (4)	p-value	[a]Contrasts
Anorexia restrictive (AN–R)	6124.1%	94.1%	2811.6%	165.5%	<.0005	$1 > 3 > (2 = 4)$
Anorexia bulimic-purgative (AN–BP)	3212.6%	73.2%	2610.7%	155.2%		$(1 = 3) > (2 = 4)$
Bulimia purgative (BN–P)	6324.9%	11351.4%	10844.6%	16657.2%		$1 < 2,3,4$; $3 < 4$ $2 = 3$; $2 = 4$
Bulimia non-purgative (BN–NP)	135.1%	167.3%	114.5%	144.8%		Non-differences
EDNOS	6726.5%	6529.5%	5321.9%	6823.4%		Non-differences
Binge eating disorder (BED)	176.7%	104.5%	16 6.6%	113.8%		Non-differences

p-value in χ^2 tests.
[a] Comparisons between clusters (contrast 2 × 2 within each row) including Finner's adjustment.

prevent binge-eating and related pathology (Stice et al., 2006) or may not be a necessary precursor to bulimic pathology (Bulik et al., 1997; Grilo & Masheb, 2000; Haiman & Devlin, 1999; Pederson Mussell et al., 1997).

Cluster analyses: subtypes along drive for thinness and depression

For that aim, the scores on two measures of diet and depression (drive for thinness, DT, and SCL-depression) in a large group of adult females meeting criteria for any eating disorder diagnosis were submitted to cluster analyses. As expected, the two previously described subtypes with high scores on DT, the "pure DT" and "DT-Depression", were found as well as two new subtypes characterized by low DT and depression ("mild DT"), and by mild to moderate DT in confluence with depression ("depressive-moderate DT"). In addition, the proportion of individuals in the "DT-Depression" cluster was similar (29%) to that found in the dietary-depression subtyping literature (Chen & Le Grange, 2007; Goldschmidt et al., 2008; Grilo, Masheb, & Wilson, 2001; Peñas-Lledó, Loeb, Puerto, Hildebrandt, & Llerena, 2008; Stice & Fairburn, 2003; Stice et al., 2001).

Subtype comparisons on sociodemographic, eating and general pathology

a) The "DT-depressive" cluster exhibited overall greater eating and comorbid psychopathology not only than the "pure DT" subtype, as suggested in previous studies (Chen & Le Grange, 2007; Goldschmidt et al., 2008; Grilo et al., 2001; Peñas-Lledó et al., 2008; Stice & Fairburn, 2003; Stice et al., 2001), but also than the other two new types. In particular, this subtype showed greater scores on measures of self-control related problems, such as ineffectiveness, impulsivity, and lower interceptive awareness as well as lower scores on the character trait of self-directedness. Considering that this type of individuals, have previously been associated with poorer response to treatment, than the "pure DT", these results are also in keeping with previous findings in BED (Stice et al., 2001), BN (Agras et al., 2000, Fassino, Abbate-Daga, Pierò, Leombruni, & Rovera, 2003) and AN (Bulik, Sullivan, Fear, & Pickering, 2000, Fassino, Daga, Pierò, & Rovera, 2002; Sholberg, Norring, Holmgren, & Roosmark, 1989), where dropout or poor response to treatment was related to lower self-directedness or self-awareness and greater impulsivity and ineffectiveness, (Fernandez-Aranda et al., 2008; Fernández-Aranda et al., 2006; Krug, Treasure, et al., 2008).

b) Additionally, the "mild DT" subtype presented overall lower eating and comorbid psychopathology than the rest, as well as greater self-directedness. In particular, this cluster showed lower current and minimum BMI values than the other subtypes. This finding appears compatible with our prediction about a lower DT or a desire to be thinner in those ED individuals who presented a successful lifetime history at achieving and maintaining lower body weight levels than the other groups. These individuals may resemble those successful dieters from prior research who presented decreases in binge-eating and related psychopathology after a 10% decrease in body weight (Stice et al., 2006) and may be opposed to those who increased bulimic pathology after having gained weight (Stice, 2001). Furthermore, the "mild DT" subtype included a greater percentage of women with a history of AN. This result appears also in keeping with previous research since the frequency of patients without DT seems greater in a population of AN (Abbate-Daga, Pierò, Gramaglia, Gandione, & Fassino, 2007) than in an unselected population of ED patients (Ramacciotti et al., 2002). These studies discussed whether the absence of negative feelings about having an eating disorder and a poor physical condition, characterized by a low body weight, could be the result of an ego-syntonic functioning in these patients.

c) As also hypothesized, the "pure DT" and "depressive-moderate DT" subtypes did not differ in the percent of women who engaged in binge eating and purging, as well as in the frequency of use of these bulimic behaviors or on self-report measures of bulimic attitudes. However, the latter showed greater psychopathology (Fernandez-Aranda et al., 2007). These results suggest that the "pure DT" and "depressive-moderate DT" subtypes appear to have a similar likelihood to engage in bulimic behaviors. This finding is in keeping with results showing that dietary restraint may not predict binge eating in patients who binge eat (Bulik et al., 1997; Grilo & Masheb, 2000; Haiman & Devlin, 1999; Pederson Mussell et al., 1997; Vanderlinden et al., 2004). It is difficult to speculate the different mechanisms of action that may explain equivalent bulimic behaviors in those with high DT and those with mild to moderate DT levels in confluence with depression (Fernandez-Aranda et al., 2007). However, both risk factors dieting and depression may predict bulimic behaviors and mediate the relationship between bulimia and body dissatisfaction (Stice, 1998). However, since body dissatisfaction was greater in "pure DT" than in the "depressive-moderate DT" type, other weight related factors might be involved in increasing bulimic behaviors in the latter subtype. In this regard, while no differences emerged between these subtypes in current BMI, maximum or minimum BMI, the "depressive-moderate DT" subtype presented a greater percent of women with history of anorexia nervosa but also with current obesity than the pure "DT" type. This result indirectly suggests that there may be a greater proportion of women with history of weight gain problems, which it has been shown to predict increases in bulimic pathology (Stice, 2001). The longitudinal relationship between AN and depression could possibly explain these findings (Fernandez-Aranda et al., 2007). Additionally, it is also possible that the relationship between bulimic psychopathology and the confluence of high depression and moderate DT, may be mediated by a number of factors related to problems of self-control or regulation. In keeping with, this subtype has shown greater scores on factors that measure these problems such as interoceptive awareness, ineffectiveness or impulsivity and lower on self-directedness, which have all been related to bulimic pathology as

discussed above for the "DT-depressive" subtype. Additionally, it is also possible to speculate that this group presented just depression and self-regulatory problems in their origins leading to bulimic behaviors (and possibly to weight gain), and that those bulimic behaviors (plus weight changes) led to future dieting behavior (Stice, 1998). As previously stated, depression and self-control related psychopathology have been related to worse outcome in eating disordered patients.

Distribution of DSM-eating disorder diagnostic types across subtypes

The distribution of DSM-ED subtypes was similar between the two previously described dietary subtypes "DT" and "DT-depressive" but different than in the new "mild to moderate DT" subtypes. The first two subtypes clearly presented a greater proportion of BN–P cases, whereas the latter were mostly characterized by an overrepresentation of AN cases. On the other hand, BN–NP, BED and EDNOS were similarly represented across all these subtypes.

These results may have some implications for discussing current DSM criteria. Firstly, fear of weight gain, which is one of the criteria for the diagnosis of AN, may not apply to almost half of AN patients (47.9%) that scored within the "mild DT" subtype. This result is also consistent with the finding, previously discussed, about a greater percent of women with history of anorexia nervosa in this subtype, as well as women with past and current lowest body weight, and with prior research reporting denial of fat phobic thoughts in AN (Lee, Chan, & Hsu, 2003), or suggesting that other physiological factors could better explain low weight rather than obesity fear (Hebebrand, Casper, Treasure, & Schweiger, 2004). In addition, the fact that AN–R and AN–BP were similarly distributed across subtypes, is also consistent with prospective research suggesting that this distinction may not be necessary (Eddy et al., 2008, 2002) and that AN–BP may be an advanced phase of the AN syndrome.

BN–P cases were mostly located in the DT and "DT-depressive" subtype than in the other groups. However, for BN–NP and BED women, this pattern was different. This suggests that the distinction between BN subtypes may be appropriate, whereas the distinction between BN–NP and BED might be not, as also suggested in a recent study (Núñez-Navarro et al., submitted for publication).

EDNOS was the second most frequent diagnosis after BN–P in this clinical population, and as BN–NP and BED, it was equally represented across empirical subtypes. This finding may suggest that EDNOS categorical classification in the DSM is limiting, making difficult to elucidate its etiology. It also seems that EDNOS (Fairburn et al., 2007; Krug, Casasnovas, et al., 2008) as well as BN–NP and BED, may include an array of heterogeneous eating disorders ranging from less to more clinically significant.

Future studies in different populations should externally validate the generalizability of the present best cluster solution obtained in this exploratory study. Further longitudinal research is also needed to determine the prognostic validity of this empirical subtyping scheme (Stice & Fairburn, 2003) based on dimensions of DT and depression since the use of a cross-sectional design does not allow any statement regarding causality. Besides, further research about this subtyping scheme should assess whether DT, which has been less often used, is equivalent to other most widely used dietary restraint measures (Stice et al., 2004). If further research proved the test–retest reliability and predictive validity of this subtyping scheme, it could be used as a complementary tool to DSM-IV criteria to detect ED patients at risk of bulimic pathology. This subtyping scheme might also help us in understanding severity of bulimic pathology, comorbidity, treatment needs and diagnostic crossover. For example, a patient with current AN–R and high scores on DT and depression could be anticipated to present a greater risk to develop binge-eating related disorders and weight gain than those AN–R with low DT and depression. The former could benefit from more intensive forms of treatment focused on well-being and healthy eating instead of weight recovery than the latter, and may need serotonin reuptake inhibitors or have their fluid and electrolyte balance assessed in case they start using laxatives or vomits during refeeding to prevent potential complications.

To summarize, our findings suggest that a) while the measures of drive for thinness and depression were different than those used in previous studies, the similarity of results with the "pure DT" and "DT-depressive" may be taken to suggest that the reliability of this subtyping scheme might not be limited to specific assessment instruments b) that this scheme might be extended to two additional subtypes; c) any eating disordered individual may be subtyped based upon "DT" and depression dimensions regardless of meeting binge-eating behavior criterion to potentially detect individuals at greater risk of binge-eating or comorbid psychopathology.

Acknowledgements

Partial financial support was received from the European Union (Framework –V Multicenter Research Grant, QCK1-1999-916; Seventh Framework Programme -FP7-ICT-215839-2007) and Fondo de Investigación Sanitario (PI081714).CIBEROBN and CIBERSAM are an initiatives of ISCIII (Spain).

References

Abbate-Daga, G., Pierò, A., Gramaglia, C., Gandione, M., & Fassino, S. (2007). An attempt to understand the paradox of anorexia nervosa without drive for thinness. *Psychiatry Research, 149*, 215–221.
Aben, I., Verhey, F., Lousberg, R., Lodder, J., & Honig, A. (2002). Validity of the beck depression inventory, hospital anxiety and depression scale, SCL-90, and hamilton depression rating scale as screening instruments for depression in stroke patients. *Psychosomatics, 43*, 386–393.
Agras, W. S., Crow, S. J., Halmi, K. A., Mitchell, J. E., Wilson, G. T., & Kraemer, H. C. (2000). Outcome predictors for the cognitive behavior treatment of bulimia nervosa: data from a multisite study. *The American Journal of Psychiatry, 157*, 1302–1308.
American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed.). American Psychiatric Association. [text revision].
Bobes, J., Badía, X., Luque, A., García, M., González, M. P., & Dal-Ré, R. (1999). Validation of the Spanish version of the Liebowitz social anxiety scale, social anxiety and distress scale and Sheehan disability inventory for the evaluation of social phobia. *Medicina Clínica, 112*, 530–538.
Brown, B. W., & Russell, K. (1997). Methods of correcting for multiple testing: operating characteristics. *Statistics in Medicine, 16*, 2511–2528.
Bulik, C. M., Sullivan, P. F., Carter, F. A., & Joyce, P. R. (1997). Initial manifestations of disordered eating behavior: dieting versus binging. *International Journal of Eating Disorders, 22*, 195–201.
Bulik, C. M., Sullivan, P. F., Fear, J. L., & Pickering, A. (2000). Outcome of anorexia nervosa: eating attitudes, personality, and parental bonding. *International Journal of Eating Disorders, 28*, 139–147.
Castro, J., Toro, J., Salamero, M., & Guimerá, E. (1991). The eating attitudes test: validation of the Spanish version. *Psychological Assessment, 7*, 175–190.
Chen, E. Y., & Le Grange, D. (2007). Subtyping adolescents with bulimia nervosa. *Behavior Research and Therapy, 45*, 2813–2820.
Cloninger, C. R. (1987). A systematic method for clinical description and classification of personality variants. A proposal. *Archives of General Psychiatry, 44*, 573–588.
Cloninger, C. R. (1999). *The temperament and character inventory–Revised. Center for psychobiology of personality*. St Louis, MO: Washington University.
Domènech, J. M. (2008). *SPSS Macro !BONFE. Bonferroni's procedures for multiple significance tests (V2007.02.19). [Computer software]*. Bellaterra: Universitat Autònoma de Barcelona. Available from. http://www.metodo.uab.cat/macros.htm.
Derogatis, L. R. (1983). *The SCL-90-R. Administration, scoring and procedures. Manual-II for the R(evised) version* (2nd ed.). Towson: Clinical Psychometric Research.
Eddy, K. T., Dorer, D. J., Franko, D. L., Tahilani, K., Thompson-Brenner, H., & Herzog, D. B. (2008). Diagnostic crossover in anorexia nervosa and bulimia nervosa: implications for DSM-V. *The American Journal of Psychiatry, 165*, 245–250.

Eddy, K. T., Keel, P. K., Dorer, D. J., Delinsky, S. S., Franko, D. L., & Herzog, D. B. (2002). Longitudinal comparison of anorexia nervosa subtypes. *International Journal of Eating Disorders, 31*, 191–201.
Fairburn, C. G., Cooper, Z., Bohn, K., O'Connor, M. E., Doll, H. A., & Palmer, R. L. (2007). The severity and status of eating disorder NOS: implications for DSM-V. *Behavior Research and Therapy, 45*, 1705–1715.
Fassino, S., Abbate-Daga, G., Pierò, A., Leombruni, P., & Rovera, G. G. (2003). Dropout from brief psychotherapy within a combination treatment in bulimia nervosa: role of personality and anger. *Psychotherapy and Psychosomatics, 72*, 203–210.
Fassino, S., Daga, G. A., Pierò, A., & Rovera, G. G. (2002). Dropout from brief psychotherapy in anorexia nervosa. *Psychotherapy and Psychosomatics, 71*, 200–206.
Fernández-Aranda, F., Jiménez-Murcia, S., Alvarez-Moya, E. M., Granero, R., Vallejo, J., & Bulik, C. M. (2006). Impulse control disorders in eating disorders: clinical and therapeutic implications. *Comprehensive Psychiatry, 47*, 482–488.
Fernandez-Aranda, F., Poyastro Pinheiro, A., Thornton, L. M., Berrettini, W. H., Crow, S., Fichter, M. M., et al. (2008). Impulse control disorders in women with eating disorders. *Psychiatry Research, 157*, 147–157.
Fernandez-Aranda, F., Poyastro Pinheiro, A., Tozzi, F., Thornton, L. M., Fichter, M. M., Halmi, K. A., et al. (2007). Symptom profile of major depressive disorder in females with eating disorders. *The Australian and New Zealand Journal of Psychiatry, 41*, 24–31.
Fernandez-Aranda, F., & Turon, V. (1998). *Trastornos de Alimentacion*. Barcelona: Masson.
First, M. B., Spitzer, R. L., Gibbon, M., & Williams, J. B. W. (1997). *Structured clinical interview for DSM-IV Axis I disorders: Clinician version: Administration booklet*. Washington, DC: American Psychiatric Press.
Fraley, C., & Raftery, A. E. (1998). How many clusters? Which clustering method? Answers via model-based cluster analysis. *Computer Journal, 4*, 578–588.
Garner, D. M. (1991). *Eating disorder inventory-2*. Odessa: Psychological Assessment Resources.
Garner, D. M. (1998). *Inventario de Trastornos de la Conducta Alimentaria (EDI-2)-Manual*. Madrid: TEA.
Garner, D. M., & Garfinkel, P. E. (1979). The eating attitudes test: an index of the symptoms of anorexia nervosa. *Psychological Medicine, 9*, 273–279.
Garner, D. M., Olmsted, M. P., Polivy, J., & Garfinkel, P. E. (1984). Comparison between weight-preoccupied women and anorexia nervosa. *Psychosomatic Medicine, 46*, 255–266.
Goldschmidt, A. B., Tanofsky-Kraff, M., Goossens, L., Eddy, K. T., Ringham, R., Yanovski, S. Z., et al. (2008). Subtyping children and adolescents with loss of control eating by negative affect and dietary restraint. *Behavior Research and Therapy, 46*, 777–787.
González de Rivera, J. L. (2001). *Spanish version of the 90-symptoms check list revised (SCL-90-R)*. Madrid: TEA ediciones.
Grilo, C. M. (2004). Subtyping female adolescent psychiatric inpatients with features of eating disorders along dietary restraint and negative affect dimensions. *Behavior Research and Therapy, 42*, 67–78.
Grilo, C. M., & Masheb, R. M. (2000). Onset of dieting vs binge eating in outpatients with binge eating disorder. *International Journal of Obesity and Relatated Metabolic Disorders, 24*, 404–409.
Grilo, C. M., Masheb, R. M., & Berman, R. M. (2001). Subtyping women with bulimia nervosa along dietary and negative affect dimensions: a replication in a treatment-seeking sample. *Eating and Weight Disorders, 6*, 53–58.
Grilo, C. M., Masheb, R. M., & Wilson, G. T. (2001). Subtyping binge eating disorder. *Journal of Consulting and Clinical Psychology, 69*, 1066–1072.
Gutiérrez-Zotes, J. A., Bayón, C., Montserrat, C., Valero, J., Labad, A., Cloninger, C. R., et al. (2004). Temperament and character inventory revised (TCI-R). Standardization and normative data in a general population sample. *Actas Españolas de Psiquiatria, 32*, 8–15.
Haiman, C., & Devlin, M. J. (1999). Binge eating before the onset of dieting: a distinct subgroup of bulimia nervosa? *International Journal of Eating Disorders, 25*, 151–157.
Hebebrand, J., Casper, R., Treasure, J., & Schweiger, U. (2004). The need to revise the diagnostic criteria for anorexia nervosa. *Journal of Neural Transmission, 111*, 827–840.
Henderson, M., & Freeman, C. P. (1987). A self-rating scale for bulimia. The 'BITE'. *British Journal of Psychiatry, 150*, 18–24.
Krug, I., Casasnovas, C., Granero, R., Martinez, C., Jiménez-Murcia, S., Bulik, C. M., et al. (2008). Comparison study of full and subthreshold bulimia nervosa: clinical, personality and short-term response to therapy. *Psychotherapy Research, 18*, 37–47.
Krug, I., Treasure, J., Anderluh, M., Bellodi, L., Cellini, E., di Bernardo, M., et al. (2008). Present and lifetime comorbidity of tobacco, alcohol and drug use in eating disorders: a European multicenter study. *Drug and Alcohol Dependence, 97*, 169–179.
Lee, S., Chan, Y. Y., & Hsu, L. K. (2003). The intermediate-term outcome of Chinese patients with anorexia nervosa in Hong Kong. *American Journal of Psychiatry, 160*, 967–972.
Núñez-Navarro, A., Villarejo, C., Álvarez-Moya, E.M., Bueno, B., Jiménez-Murcia, S., Granero, R., Penelo, E., Krug, I., Tinahones, F., Masuet, C., Bulik, CM., y Fernández-Aranda, F. Bulimia nervosa vs. Binge eating disorder: common and differential clinical and personality correlates, submitted for publication.
Pederson Mussell, M., Mitchell, J. E., Fenna, C. J., Crosby, R. D., Miller, J. P., & Hoberman, H. M. (1997). A comparison of onset of binge eating versus dieting in the development of bulimia nervosa. *International Journal of Eating Disorders, 21*, 353–360.
Peñas-Lledó, E. M., Loeb, K. L., Puerto, R., Hildebrandt, T. B., & Llerena, A. (2008). Subtyping undergraduate women along dietary restraint and negative affect. *Appetite, 51*, 727–730.
Ramacciotti, C. E., Dell'Osso, L., Paoli, R. A., Ciapparelli, A., Coli, E., Kaplan, A. S., et al. (2002). Characteristics of eating disorder patients without a drive for thinness. *International Journal of Eating Disorders, 32*, 206–212.
Ricciardelli, L. A., & McCabe, M. P. (2001). Dietary restraint and negative affect as mediators of body dissatisfaction and bulimic behavior in adolescent girls and boys. *Behavior Research and Therapy, 39*, 1317–1328.
Rivas, T., Bersabé, R., & Jiménez, M. (2004). Fiabilidad y validez del test de investigación bulímica de Edimburgo (BITE) en una muestra de adolescentes españoles. *Psicología Conductual, 12*, 447–461.
Sholberg, S., Norring, C., Holmgren, S., & Roosmark, B. (1989). Impulsivity and long term prognosis of psychiatric patients with anorexia nervosa/bulimia nervosa. *Journal of Nervous and Mental Disease, 177*, 249–258.
Steer, R. A., Ball, R., Ranieri, W. F., & Beck, A. T. (1997). Further evidence for the construct validity of the beck depression inventory-II with psychiatric outpatients. *Psychological Reports, 80*, 443–446.
Stice, E. (1998). Relations of restraint and negative affect to bulimic pathology: a longitudinal test of three competing models. *International Journal of Eating Disorders, 23*, 243–260.
Stice, E. (2001). A prospective test of the dual-pathway model of bulimic pathology: mediating effects of dieting and negative affect. *Journal Abnormal Psychology, 110*, 124–135.
Stice, E., Agras, W. S., Telch, C. F., Halmi, K. A., Mitchell, J. E., & Wilson, T. (2001). Subtyping binge eating-disordered women along dieting and negative affect dimensions. *International Journal of Eating Disorders, 30*, 11–27.
Stice, E., & Fairburn, C. G. (2003). Dietary and dietary-depressive subtypes of bulimia nervosa show differential symptom presentation, social impairment, comorbidity, and course of illness. *Journal of Consulting and Clinical Psychology, 71*, 1090–1094.
Stice, E., Fisher, M., & Lowe, M. R. (2004). Are dietary restraint scales valid measures of acute dietary restriction? Unobtrusive observational data suggest not. *Psychological Assessment, 16*, 51–59.
Stice, E., Martinez, E. E., Presnell, K., & Groesz, L. M. (2006). Relation of successful dietary restriction to change in bulimic symptoms: a prospective study of adolescent girls. *Health Psychology, 25*, 274–281.
Theodoridis, S., & Koutroumbas, K. (1999). *Pattern recognition*. New York: Academic Press.
Vanderlinden, J., Dalle Grave, R., Fernandez, F., Vandereycken, W., Pieters, G., & Noorduin, C. (2004). Which factors do provoke binge-eating? An exploratory study in eating disorder patients. *Eating and Weight Disorders, 9*, 300–305.
Walker, E. A., Katon, W. J., Russo, J., Von Korff, M., Lin, E., Simon, G., et al. (2000). Predictors of outcome in a primary care depression trial. *Journal of General Internal Medicine, 15*, 859–867.
Watson, D., & Friend, R. (1969). Measurement of social-evaluative anxiety. *Journal of Consulting and Clinical Psychology, 33*, 448–457.
Williamson, D. A., Barker, S. E., Bertman, L. J., & Gleaves, D. H. (1995). Body image, body dysphoria, and dietary restraint: factor structure in nonclinical subjects. *Behavior Research and Therapy, 33*, 85–93.

10.3 Study 3

Research Letter for *Psychotherapy & Psychosomatics*

Differences in Cognitive Behavioral Treatment dropout rates between Bulimia Nervosa subtypes based on Drive for Thinness and Depression

Dear Editor,

Dropout rates from therapy in bulimia nervosa (BN) are variable and premature [1-4]. Despite typical Cognitive Behavior Therapy (CBT) proven effectiveness for BN, attrition rates in routine clinical practice may be as high as 50% though in selected populations appear to be lower around 20% [1-2]. This variability may suggest that depending on the population, a higher or lower group of patients may early detect that this treatment is not suitable for them, which it may be associated with their pretreatment characteristics [3]. In keeping with, non-adherence to CBT in BN has been consistently related to depression [2-4]. This is important because CBT for BN [5], as other brief interventions [6], is a focal and practical method of treatment that explicitly addresses from the very first sessions, specific problems such as reducing extreme dietary restraint to stop the vicious binge eating-purging cycle but it does not address mood disturbances [5]. However contradictory findings with regard to dropouts in CBT of BN and pretreatment depression also exist, since no differences were found between patients classified by cluster analysis into one of two subtypes, a mixed "dietary-depressive" and a pure "dietary" with low levels of depression [7].

This apparent contradiction might be partially resolved by using the expanded version of the original etiologic and maintenance model of binge eating [7], based on EDI-drive for thinness (DT) and SCL-depression [8]. This new model proposed that besides the two abovementioned types with high dietary restraint, two other types characterized by either low levels of DT and depression ("mild") or low to moderate levels of DT but high depression ("depressive") seem to exist among eating disordered patients (ED) [8]. Therefore, it is likely that those individuals seeking relief of the symptoms that CBT addresses (high dietary restraint or DT without depression) will find it more suitable and will adhere more to CBT

than those without this active problem or with the opposite one as active (depression without high DT). Similarly, those in the mixed "DT-depressive" subtype despite higher levels of depression than the pure "DT" type will be likely to find some relief for the active problem of dietary restraint what may explain no differences in dropout.

In the present study, a total of 154 adult females meeting DSM-IV-TR (APA, 2000a) criteria for purging Bulimia Nervosa (BN-P) participated. They were consecutively admitted for group based outpatient treatment with no other psychotherapy at the time at the Eating Disorders Unit (University Hospital of Bellvitge). Treatment consisted of 22 (8-10 outpatients) 90-minute sessions over 20 weeks (twice weekly for the first 2 weeks). This comprised 6 initial sessions of brief psychoeducation [6] followed by16 of CBT [5]. The Institution Ethics Committee approved this study and informed consent was obtained from all participants.

Patients were assessed with well-validated questionnaires as detailed elsewhere (8), such as the Eating Disorders Inventory-2 (EDI-2) and the Symptom Checklist-90-Revised (SCL-90-R). For their subtyping, the scores on the EDI-DT and SCL-90-R- depression subscales were used. The EDI-DT specifically looks at preoccupation with weight showing high correlation with common dietary restraint measures. Since an EDI-DT cut-off score of 14 is used to detect individuals at risk of an eating disorder, all individuals scoring below or equal 14 were considered as presenting low DT as opposed to those scoring above who were considered to present high DT. The SCL-90-R-depression subscale highly correlates with the commonly used Beck Depression Inventory, and differentiates non-clinical and mild to moderate depression from severe depression (scores greater than 2). Therefore, all patients scoring below or equal 2 were considered as having low depression and those scoring above as having high depression. By using these pretreatment cutoff scores, four subtypes emerged (Table 1) similar in proportions to those previously found for BN-P with rates of 14%, 25,1%, 24% and 37% of the BN-P corresponding to "mild", pure "DT", "depressive-mild DT" and "dietary-depressive" subtypes, respectively [8]. The rate of total attrition was also very similar to rates found for group CBT [9] or individual CBT [10]. In keeping with the hypothesis, attrition rates differed between subtypes (Table 1). Dropout rate was higher (60%) in the "depressive" subtype (24.5%) than in the rest, and lower (18%) in the "pure DT" subtype (17.5%) than in the two subtypes with mild DT scores. No differences were found between the two subtypes with high DT.

Thus, this study supports and extends previous findings by proposing a new strategy to classify patients into four different subtypes throughout the use of worldwide valid cutoff scores of DT and depression [8] without needing to submit them to cluster analysis as in previous studies [7,8]. In addition, it provides for the first time predictive validity for this subtyping scheme with regard to dropout from CBT in an unselected BN-P population seeking treatment.

Future studies are needed to replicate these findings, such studies should control for pharmacotherapy during CBT, which is a limiting factor of the present study. For example, antidepressant drugs such as fluoxetine might explain a substantial percent of those women within the depressive subtypes that did not dropout from treatment in the present study.

In sum, present results suggest that this expanded subtyping model [8] based on DT and Depression present predictive validity for identifying BN-P patients at risk of CBT failure, and could be used at initial assessment to lower rates of dropout.

- **References**

1. Fassino S, Pierò A, Tomba E, Abbate-Daga G: Factors associated with dropout from treatment for eating disorders: a comprehensive literature review. BMC Psychiatry 2009; 9:67.
2. Mitchell J: A review of controlled trials of psychotherapy for bulimia nervosa. J Psychosom Res 1991; 35:23–31.
3. Agras WS, Crow SJ, Halmi KA, Mitchell JE, Wilson GT, Kraemer HC: Outcome predictors for the cognitive behavior treatment of bulimia nervosa: data from a multisite study. Am J Psychiatry 2000;157:1302-1308.
4. Steel Z, Jones J, Adcock S, Clancy R, Bridgford-West L, Austin J: Why the high rate of dropout from individualized cognitive-behavior therapy for bulimia nervosa? 2000; Int J Eat Disord. 2000;28:209-214

5. Wilson GT, Fairburn CG, Agras WS: Cognitive-behavioral therapy for bulimia nervosa. In Garner DM, Garfinkel PE (ed): Handbook of treatment for eating disorders. New York, Guilford Press, 1997, pp 67–93.

6. Davis R, Olmsted MP, Rockert W: Brief group psychoeducation for bulimia nervosa: assessing the clinical significance of change. J Consult Clin Psychol 1990;58:882–885.

7. Stice E, Agras WS. Subtyping bulimic women along dietary restraint and negative affect dimensions. J Consult Clin Psychol 1999;67:460-469.

8. Peñas-Lledó E, Fernández-Aranda F, Jiménez-Murcia S, Granero R, Penelo E, Soto A, Gunnard K, Menchón JM: Subtyping eating disordered patients along drive for thinness and depression. Behav Res Ther 2009;47:513-519.

9. Wilfley DE, Agras WS, Telch CF, Rossiter EM, Schneider JA, Cole AG, Sifford LA, Raeburn SD: Group cognitive-behavioral therapy and group interpersonal psychotherapy for the nonpurging bulimic individual: a controlled comparison. J Consult Clin Psychol. 1993;61:296-305.

10. Waller G: Drop-out and failure to engage in individual outpatient cognitive behaviour therapy for bulimic disorders. Int J Eat Disord 1997;22:35-41.

Acknowledgements

Financial support was received from the Fondo de Investigación Sanitaria (PI081573; PI081714) and Agència de Gestió d'Ajuts Universitaris i de Recerca (2009SGR1554; FI-DGR 2008). CIBER Fisiopatología de la Obesidad y Nutrición is an initiative of Instituto Salud Carlos III.

Table 1. Differences in CBT dropout rates between subtypes based on pre-treatment scores of EDI-Drive for Thinness (DT>14; b & d) and SCL-90-R-Depression (Depressive >2; c & d).

Diagnostic subtype	**a. Mild**	**b. DT**	**c. Depressive**	**d. DT-Depressive**	Comparisons
Total patients (N=154)	**19 (12.3%)**	**27 (17.5%)**	**38 (24.7%)**	**70 (45.5%)**	Contrasts[a]
Completers (n=104)	13 (68.4%)	22 (81.5%)	15 (16.7%)	53 (69.0%)	
Dropout (n=51)	6 (31.6%)	5 (18.5%)	23 (60.5%)	17 (24.3%)	c > a > b; c > d

[a] p-value in X^2 tests < 0.05 (two-tailed).

11. DISCUSSION

The overall objective of the present thesis was to improve the health of women with ED by exploring clinical and psychopathological correlates of ED and better understand how social and individual risk factors are associated to ED. Accordingly, the first line of investigation assessed the relevance of social and self –standards in ED **(Study 1).** The second area **(Study 2 and 3)** examined new empirical subtypes of ED along drive for thinness and depression. We will try to discuss the main findings in more detail and put them into a new theoretical framework. The results of the present thesis will help guide the direction of research in the field of risk factors and categorical classification diagnoses of EDs and contribute to the early detection, prevention and treatment of EDs.

11.1 A new framework for self-discrepancy theories: the role of social and individual domains in ED

The majority of EDs start at an early stage in life (Micali et al., 2007). Gastrointestinal difficulties (C. Jacobi, Hayward, de Zwaan, Kraemer, & Agras, 2004) or feeding by mothers with a previous or current ED (Birch & Fisher, 1998; Park, Senior, & Stein, 2003), are the earliest risk factors for developing an ED later in life. After the infant period is over and the child has started to eat solid food, the family environment becomes just as important as the mother's role in the child's development of eating behaviours. The family environment does not only have an impact upon the child's appetite or satiety, it also influences how the child eats; too fast, picky eating, overeating, restricted eating etc. Consequently, the child's weight will be a reflection of the type of eating behaviour engaged in, together with physical activity. Critical comments from family and peers about eating behaviours, weight and body shape is highly associated to the development of BN (C. G. Fairburn, Welch, Doll, Davies, & O'Connor, 1997). In the case of AN, parental pressure and over-protectiveness lead to feelings of being of a lower social rank (C.G. Fairburn, Cooper, Doll, & Welch, 1999;

Treasure, Cardi, & Kan). The first article of the current dissertation found that ED patients experienced a greater level of conflict, with their significant others, over their physical appearance, family standards and self-achievements. It can be questioned whether the greater level of conflict that ED patients experience in adulthood, has been generated at an early age. Moreover, it can be questioned what sort of parenting behaviour can cause disturbed eating behaviours and whether the critical comments about shape and weight are the most harmful, or whether parents who have a high drive for thinness and body dissatisfaction will cause more harm by projecting this on their children. Conceivably, it may simply be a matter of ED patients being more sensitive to such comments and retrospectively recording a greater level of perceived family pressure in comparison to healthy peers.

All types of expectations seem to be reciprocally related; one's self-expectations partly steam from parents and society's opinion, while the expectations one may think one should have as a parent often comes from individual beliefs influenced from society, and finally social expectations in the end are nothing but joined and mutual individual expectations.

The greater self-discrepancy in ED patients for the three risk factor domains: physical appearance, family standards and self-achievement, supports and extends the self-discrepancy theory (Higgins, 1987). Not only do the present findings support the theory that ED patients evaluate their "actual" self lower than their "ideal" self (Higgins, 1987) to such extent that it causes poor emotional processing (Oldershaw et al.; Zeeck, Stelzer, Linster, Joos, & Hartmann) (which may in turn provoke the ED), it also suggests certain dysfunctional standards to be associated to a specific ED subtype (see above) and thus questions the ED within-diagnostic heterogeneity.

Finally, a brief additional note on the differences between ED patients and healthy controls should be made. ED patients obtained significantly higher self-discrepancy and level of conflict in all of the risk factor domains. It can be questioned whether this was due to the actual ED itself or whether in fact the ED is a secondary effect of higher self-discrepancy and level of conflict regarding physical appearance, family and professional success.

11.2 Associations of social and individual risk factors to ED subtypes

In accordance with our first hypothesis we found that the risk factors presented in the CCQ model; namely physical appearance, family standards and self-achievements, were more common in all ED patients and furthermore differently distributed across the ED subtypes; AN, BN and EDNOS. This is in line with that ED patients' self-esteem often relay on their shape and weight. Additionally however, the present dissertation (Gunnard et al., 2011) contradicted these finding by highlighting that social and self-standards may be divided and thought of in different domains and that people with EDs also base their self-esteem on several risk factors to a certain extent. Therefore, self-esteem in not explored as a single construct and strengthens and adds to previous findings of various contributing risk factors to low self-esteem (Silvera et al., 1998; Young, Clopton, & Bleckley, 2004) (Connan, Troop, Landau, Campbell, & Treasure, 2007).

Physical appearance (including physical attractiveness, slimness and physical fitness) was most important to BN patients, followed by EDNOS patients, compared to AN patients. As suggested in the article, this is probably due to the greater body weight and hence higher wish to lose weight that BN patients encounter (F. Fernandez-Aranda, Dahme, B. and Meermann, R., 1999). The results are also in line with the DSM-IV (and new DSM-V) criteria for BN, namely that self-evaluation in BN is unduly influenced by body shape and weight (APA, 2000; Keel, Brown, Holm-Denoma, & Bodell). Perhaps, it is this poor self-evaluation together with feelings of self-disgust and shame that causes people with BN to have a poorer prognosis of full recovery (APA, 2000; F. Fernandez-Aranda, Dahme, B. and Meermann, R., 1999; Probst, Vandereycken, Van Coppenolle, & Pieters, 1999).

Contrastingly, AN patients experienced the greatest level of conflict with significant others over physical appearance, compared to BN followed by EDNOS. As suggested in the article, the most likely explanation is probably that AN patients have lower body weight, that may inclusively be putting their life in danger. This then generates a greater level of conflict with significant others, as it has to be expected. BN patients are more

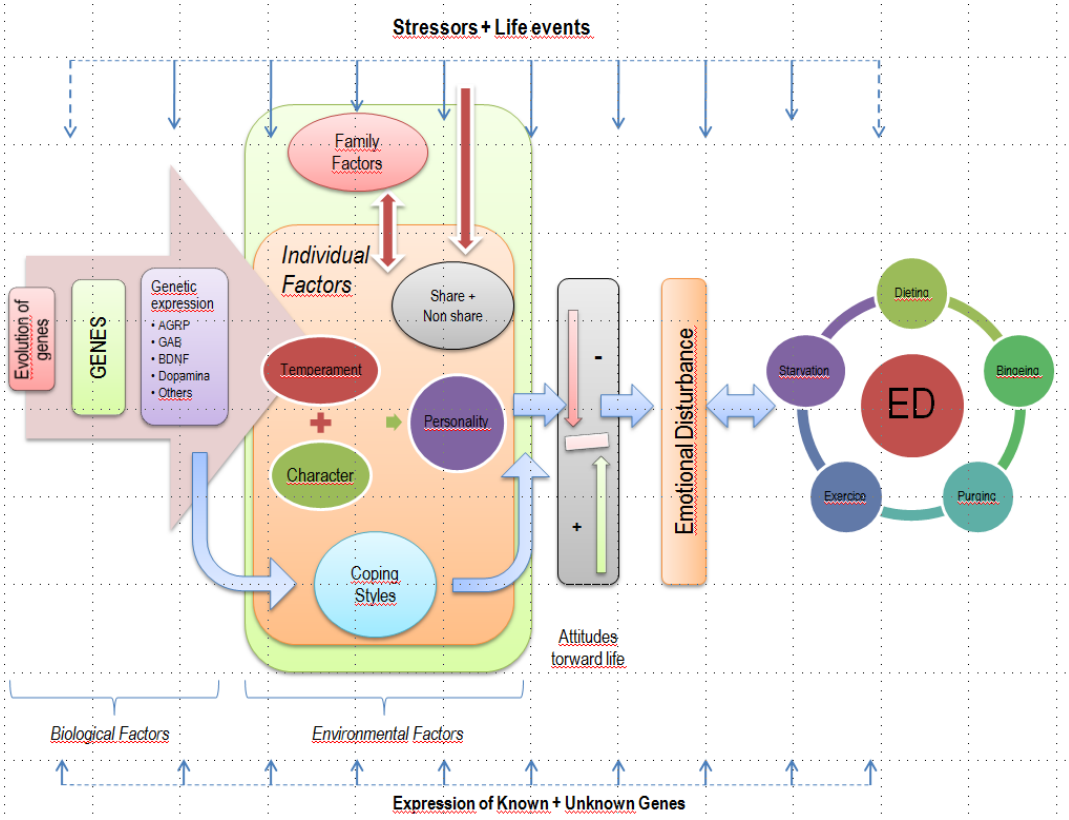
likely to generate higher level of conflict with their significant others due to the fact that they engage in more risky and damaging eating behaviours such as a frequent vomiting and laxative use. Such behaviours occur in EDNOS patients as well, however on a "lighter" level. Therefore parents may not be as worried before behaviours such as vomiting and laxative use occur more frequently and in a more severe form.

The greatest degree of self-discrepancy for physical appearance was found in BN patients. This is in line with the literature, considering that BN patients give their physical appearance extreme importance compared to healthy subjects, yet evaluate themselves as very unsuccessful. This may be due to their greater dissatisfaction with their body weight, in comparison to AN, however one underlying cause may also be that BN patients have lower self-esteem based on social comparison. However, if one assumes that part of the low body self-esteem in BN steams from poor social comparison, such an assumption in its turn then questions the notion that low social rank is a more common risk factor in AN patients (Connan, Troop, Landau, Campbell, & Treasure, 2007; Ferreira, Pinto-Gouveia, & Duarte; Troop, Allan, Treasure, & Katzman, 2003)considering BN scored higher. Perhaps people with AN beliefs about low social rank are more rooted in perfectionism (M. B. Anderluh, Tchanturia, Rabe-Hesketh, & Treasure, 2003; Connan, Troop, Landau, Campbell, & Treasure, 2007), while people with BN base it more on physical appearance (Ferreira, Pinto-Gouveia, & Duarte).

Furthermore and surprisingly, the degree of discrepancy was significantly higher in EDNOS than AN patients. EDNOS patients considered themselves more successful on *physical appearance* but also evaluated the category as more important than AN patients, hence the larger self-discrepancy for the EDNOS group. These results raises further doubts about the role physical appearance really play in AN. A part from the lower social rank in AN mentioned above, a common belief in the general population, is that AN is caused by the wish to be thinner and more attractive. The present result supports this general belief if a comparison is made between the AN and control group. However, it should be pointed out that the control group experienced almost a nil degree of discrepancy compared to the ED groups, suggesting that poorer self-esteem regarding one's physical appearance is present in all ED. However, one might expect it to be significantly higher in AN considering the drastic measures people with AN undergo to

become thinner. The fact that AN patient do not give physical appearance as much importance as BN and EDNOS patients, suggest that the main underlying factor of AN may be something more biological and individually bound (Sulek, Lacinova, Dolinkova, & Haluzik, 2007; Vignini et al.). On the other hand, another underlying reason may be their significantly lower body weight (F. Fernandez-Aranda, Dahme, B. and Meermann, R., 1999). This was supported by the cluster analysis carried out in the second article (Penas-Lledo et al., 2009) where almost half of the AN groups did not fear weight gain and the majority fell in the new subtypes "mild-DT" and "depressive-moderate DT", showing lower drive for thinness (DT) but greater general psychopathology (Penas-Lledo et al., 2009).

Figure 11: *The influence of risk factors on the course of ED*



11.3 Categories or continuum: new valid constructs in the classifications of ED

Emotion regulation is a key issue both in ED and affective disorders (Joos et al.) and there are therefore sometimes more subtle differences between the two disorders. The high comorbidity of depression in ED and the latter mentioned findings (Penas-Lledo et al., 2009)lead us to our following main hypothesis, where we confirmed that new empirical subtypes based on drive for thinness (DT) and depression are in fact new valid constructs for re-categorizing ED subtypes more accurately and accordingly to the changes taking place within ED diagnoses. It has not yet been established whether EDNOS is progression into AN and BN or whether it should be categorized and classified according to new diagnostic criteria (Preti et al., 2009). What is certain is that EDNOS can no longer be categorized as ED outliers, when the group constitutes more than 60 % of all ED (Machado, Machado, Goncalves, & Hoek, 2007).

The article included in the present dissertation (Penas-Lledo et al., 2009) takes Stice's dual pathway model (Stice et al., 2001) a step further by suggesting four subtypes based on the same dimensions. Stice (2001) (Stice et al., 2001) suggests that perceived social pressure to be thin and the social thin beauty ideal produce body dissatisfaction. This body dissatisfaction promotes dieting and may lead to AN. From there, the AN may progress into binge eating and purging behaviours and hence other ED. Moreover, body dissatisfaction is suggested to produce negative affect, which may enhance the binge and purging behaviours present in BN and BED (i.e. emotional eating). These findings are supported by the new subtyping scheme for eating pathology along drive for thinness and depression, yet added two additional subtypes in order to obtain a more valid and clinically useful model.

Elevated dietary restraint increases the risk of any ED (Stice et al., 2001) and is therefore a crucial element in new empirical subtypes. However, the high comorbidity with affective disorders (Schmidt et al., 2008) should not be forgotten, and was therefore incorporated into our new model. The four new subtypes; "pure DT", "DT-depressive" "mild DT" and "depressive-moderate DT" were valid construct to account

for different sociodemographic, eating and general pathology, as well as incorporating all DSM-eating disorder diagnostic subtypes (APA, 2000) across the four categories.

One of the objectives of this dissertation was to examine possible distribution and clustering of ED subtypes across empirical subtypes. The clustering of the DSM- eating disorder diagnostic subtypes AN-R, AN-BP, BN-P, BN-NP, BED and EDNOS along DT and depression was similar for "DT" and "DT-depressive", however the two new additional subtypes in the model presented showed a different clustering of the DSM-ED subtypes, especially for the AN groups (Penas-Lledo et al., 2009) which majority of cases fell into the new empirical subtypes "mild DT" and "depressive-moderate DT". AN-R and AN-BP clustered equally along the two new additional subtypes and consequently suggested that the distinction between the two syndromes may not be necessary and that furthermore AN-BP is in fact an advanced phase of the AN syndrome. This supports that ED subtypes can be more valid and clinically useful if more factors apart from eating and weight related ones are taken into account such as co-morbidity with depression (Penas-Lledo et al., 2009) or anxiety (Penas-Lledo et al., 2010).

Perhaps the most clinical relevant finding, is the equal representation of EDNOS across the four empirical subtypes. The equal distribution, questions the diagnostic criteria for EDNOS in the DSM-IV-TR (APA) and whether EDNOS should be classified as a category. As it may be, EDNOS is better to think of as part of an ED continuum (Palmer, 2008) rather than a category for ED outliers. It would be more clinically useful to put the category EDNOS aside and instead base diagnoses on symptomatology, comorbidity and clinical correlates.

11.4 New empirical ED subtypes based on DT and depression as additional tools in ED categorical classifications

Prevention programs and studies on future onset of threshold, subthreshold or partial ED are scarce (Stice, Marti, & Durant). There is an extra lack of studies on subthreshold and partial EDs, It is important to include them since they are not only higher in number but also easier to prevent and treat. The present dissertation also draws attention to the

flaw in the current DSM-ED categorical classification of EDNOS and furthermore suggests basing diagnostic criteria on comorbid psychopathology as well as symptomatology (APA, 2000).

Previous literature has widely documented the association between ED and affective disorders. It has been established that people who suffer from ED and affective disorders co-jointly have greater substance and alcohol use, higher suicide attempts rate and greater frequency of purging behaviours. They also share risk factors such as temperament, genetic factors, low self-esteem, cognitive styles, eating symptoms, attachment style, childhood adversity and psychosocial adjustment. If EDs were subtyped according to the level of depression as well as eating symptomatology, this might cause an improvement not only in preventive processes but also in the treatment of these disorders.

The new empirical subtypes presented will aid to measure bulimic behaviours more accurately by taking the level of affective co-morbidity into account and thereby more accurately explain the severity of bulimic pathology in some cases. Moreover, the new classifications based on drive for thinness and depression could help untangle the distinction between BN-NP and BED or diagnostic crossovers.

In terms of treatment, the new empirical ED subtypes might help to facilitate therapy such as CBT in focus and direction (Christopher G. Fairburn, Cooper, & Shafran, 2003). Rather than mainly focusing on fear of gaining weight and dieting behaviours, in some ED cases it may be more appropriate to mainly focus on mood and emotional regulation. Moreover, the new empirical subtypes may be of crucial aid in cases where drug treatment is necessary. Antidepressant can be put in an even earlier stage and help speed up the recovery process.

11.5 Treatment

After exploring the role of social and individual risk factors and establishing four new empirical ED subtypes, based on drive for thinness and depression, as valid categories to apply in prevention and diagnosis of ED, we wanted to extend previous findings by providing predictive validity for this subtyping scheme to aid CBT treatment and prevent dropout rates.

There are three main objectives in treatment; weight restoration, treating underlying symptoms and nutritional rehabilitation (APA, 2000). Patients with BN respond better to treatment (Vanderlinden et al., 2004), yet they have higher dropout rates than any other ED group (Fassino, Piero, Tomba, & Abbate-Daga, 2009; Mitchell, 1991). The present dissertation has lent support to a wide array of research demonstration the importance of depressive comorbidity in ED (Penas-Lledo et al., 2009). Drop-out rates from CBT in BN have been associated to depression and the failure of addressing the comorbid disorder within the CBT treatment (Waller, 1997). The same four empirical subtypes emerged when patients were evaluated with the questionnaires EDI-2 and SCL-90 rather than cluster analysis, and hence supporting the empirical subtypes further. Furthermore, the following findings of differed attrition rates for the DT/depressive subtype are of tremendous clinical relevance, reporting that the dropout rate was highest for the "DT-Depressive" subtype. This supports the clinical validity of not only dieting scales as measurement of EDs, but also comorbid depression as a predictor of both development and outcome of EDs.

11.6 Future studies

The present dissertation can help in the development of prevention programs that target key vulnerability factors; especially dieting / physical appearance concern and depression. A body dissatisfaction scale could target individuals who are in the risk

zone for developing an ED. Such a scale could be elaborated even further on and incorporate other risk factors such as physical appearance, dieting and depressive mood. Furthermore, the model created from the CCQ scale in **Study 1** incorporates one more concept that may be crucial in prevention programs; namely 'self-discrepancy'. Considerable progress has been made in the studies on risk factors and new risk factors have been identified for BN, BED and EDNOS-BN. The model adapted from the CCQ **(Study 1)** may account for additional risk factors and perhaps explains a third variable.

Such a third variable might be extra important to incorporate in the prevention programs for subthreshold AN and restrictive EDNOS. The prevention program "Student Bodies' (C. Jacobi, Volker, Trockel, & Taylor, 2012) represent an effective intervention form individuals with subthreshold ED of the binge eating type. By a 8 weeks/8sessions internet-based program to reduce ED symptoms and core risk factors in women with subthreshold ED, it reduces attitudes of disturbed eating for the ED groups of a binge/purgative nature. However, the prevention program showed no positive effects for the restrictive and chronic ED groups. The program also failed to reduce depressive symptoms. The reason for this is because the program targeted disturbed eating rather than disturbances in mood. The present dissertation highlights cognitions and feelings in reference to oneself as crucial. Therefore, this work will hopefully also highlight the need of a prevention program that targets both ED symptoms and depressive symptoms. One could argue that a prevention program could be applied from the dual model by Stice (2001)(Stice et al., 2001), however the extended model presented **(Study 2)** accounts for the more restrictive ED cases such as AN-R and EDNOS-AN, where comorbid depression may play a more important role than dieting. Existing concerns about the validity of current DSM diagnoses could be partially remediated if the DSM were used in conjunction with alternative subtyping schemes that prove clinical utility in predicting features such as drive for thinness and depression.

12. SUMMARY OF MAIN FINDINGS AND CONCLUSIONS

The central scientific objective of the current dissertation was to take a multidisciplinary approach to make use of the full potential information, both scientific and clinical to aid prevention and treatment of EDs. In our studies we assessed a.) social and individual risk factors in EDs **(Study 1)**, b.) empirical ED subtypes based on drive for thinness (DT) and depression **(Study 2)** and c.) the classification based on these four different empirical ED subtypes without cluster analysis and based on the use of clinical cutoff scores of DT and depression. Finally, we assessed the predictive validity for this subtyping scheme with regard to dropout from CBT in an unselected BN-P population seeking treatment.

Our first line of investigation **(Study 1)** assessed social and self-standards in EDs. The results of the study suggest that compared to healthy controls, standards for physical appearance, family standards and self-achievements were higher in individuals with EDs, that ED patients show higher self-discrepancy between their personal and social values and confidence to attain them and that the conflict with their significant others over these issues was higher. Furthermore, high social and self-standards was associated with developing an ED, which emphasize the importance of assessing risk factors in ED. Finally we also observed differences in the ED subtypes; physical appearance a greater risk factor in BN and EDNOS while social-other standards were more associated with AN.

The second research area **(Study 2** and **3)** explored new empirical ED subtypes along DT and depression. In our initial study **(Study 2)** we found four new ED subtypes through cluster analysis; “DT”, “DT-Depressive”, “mild DT” and “depressive-moderate DT”. This result indicates that dieting and depression are useful for analyzing and identifying ED subtypes.

Study 3 further assessed these empirical subtypes and found that the same subtypes emerged when basing them on scores from clinical well-validated questionnaires and moreover that attrition rates differed between subtypes and that the dropout rate was highest for the "DT-Depressive" subtype. Our findings agree with the growing body of research indicating the importance of dieting and comorbid depression as contributing factors in ED diagnoses. Finally, these findings will hopefully aid in resolving the current controversy surrounding current DSM-ED classifications.

13. RESUMEN DE LOS HALLAZGOS MÁS DESTACADOS Y CONCLUSIONES

El objetivo central de esta tesis ha sido, desde una perspectiva multidisciplinar, integrar los conocimientos clínicos y científicos para contribuir en el avance de la prevención y tratamiento de los Trastornos de la Conducta Alimentaria (TCA). En estos estudios, se han explorado una serie de aspectos como a) factores de riesgo sociales e individuales en los TCA (**estudio 1**), b) identificación de subtipos empíricos de los TCA, basados en el impulso a la delgadez y la realización de dietas y la depresión (**estudio 2**), y c) asociación entre los cuatro subtipos de TCA, basados en los factores descritos, y respuesta a un abordaje cognitivo-conductual, en una población con diagnóstico de bulimia nerviosa purgativa (BN-P), que solicitaron tratamiento por su trastorno (**estudio 3**).

Nuestra primera línea de investigación (**estudio 1**) analizó la implicación de las expectativas sociales e individuales en los TCA. Los resultados de este trabajo sugirieron que las expectativas familiares, individuales y las relacionadas con la apariencia física, eran superiores en pacientes con TCA que en sujetos control. Asimismo, los pacientes con diagnóstico de TCA mostraban mayor discrepancia entre sus valores personales y sociales, menor confianza en poder alcanzarlos y mayor conflicto con sus familiares por estas cuestiones. Por otra parte, la presencia de elevadas expectativas sociales y personales se asociaba al desarrollo de un TCA, lo que enfatizaba la importancia de evaluar estos factores de riesgo. Finalmente, se observaron diferencias significativas entre los subtipos de TCA, siendo la apariencia física un factor de riesgo más presente en BN y en trastornos de la conducta alimentaria no especificados (TCANE), mientras que otras expectativas sociales se asociaban más a la anorexia nerviosa (AN).

La segunda línea de investigación (**estudios 2 y 3**) exploraba nuevos subtipos empíricos de TCA, teniendo en cuenta las variables de impulso a la delgadez y realización de dietas (ID) y la depresión (D). En el primer trabajo (**estudio 2**), se obtuvieron cuatro nuevos subtipos a través de un análisis de *cluster*. Los subgrupos fueron "ID", "ID-Depresivo", "ID moderado" y "D-ID moderado". Estos resultados mostraban que la realización de dietas y la depresión eran útiles en el análisis e identificación de subtipos en los TCA.

En el **estudio 3** se exploraban estos subtipos con mayor profundidad, observando que se obtenían los mismos subgrupos, cuando nos basábamos en las puntuaciones de diversos cuestionarios clínicos validados. Asimismo, la respuesta al tratamiento era distinta en función de los subtipos de TCA, presentando tasas de abandonos más elevadas el subtipo "ID-Depresivo". De este modo, los resultados estaban en concordancia con las evidencias empíricas, cada vez mayores, que indican la importancia de la realización de dietas y la depresión comórbida, como factores que contribuyen a explicar características diagnósticas en los TCA. Finalmente, estos hallazgos podrían tener una relevancia destacada en la controversia actual sobre las clasificaciones diagnósticas en el próximo DSM.

14. RESUM DE RESULTATS PRINCIPALS I CONCLUSIONS

L'objectiu central d'aquesta tesi ha estat, des d'una perspectiva multidisciplinar, integrar els coneixements clínics i científics per a contribuir a l'avenç de la prevenció i tractament dels trastorns de la conducta alimentària (TCA). En aquests estudis, s'han explorat una sèrie d'aspectes com a) factors de risc socials i individuals en els TCA (**estudi 1**), b) identificació de subtipus empírics dels TCA, i c) associació entre els quatre subtipus de TCA, basats en els factors descrits, i resposta a un abordatge cognitivoconductual, en una població amb diagnòstic de bulímia nerviosa purgativa (BN-P), que varen sol·licitar tractament pel seu trastorn (**estudi 3**).

La nostra primera línia de recerca (**estudi 1**) va analitzar la implicació de les expectatives socials i individuals en els TCA. Els resultats d'aquest treball varen suggerir que les expectatives familiars, individuals i les relacionades amb l'aparença física, eren superiors en pacients amb TCA que en subjectes control. Alhora, els pacients amb diagnòstic de TCA mostraven major discrepància entre els seus valors personals i socials, menor confiança en poder aconseguir-los i major conflicte amb els seus familiars per aquestes qüestions. Per altra banda, la presència d'elevades expectatives socials i personals s'associava al desenvolupament d'un TCA, fet que emfatitzava la importància d'avaluar aquests factors de risc. Finalment, es varen observar diferències significatives entre els subtipus de TCA, sent l'aparença física un factor de risc més present en BN i en trastorns de la conducta alimentària no especificats (TCANE), mentre que altres expectatives socials s'associaven més a l'anorèxia nerviosa (AN).

La segona línia de recerca (**estudis 2 i 3**) explorava nous subtipus empírics de TCA, tenint en compte les variables d'impuls a estar prim i realització de dietes (ID) i la depressió (D). En el primer treball (**estudi 2**), es varen obtenir quatre nous subtipus a través d'una anàlisi de *cluster*. Els subgrups foren "ID", "ID-Depressiu", "ID moderat" i

"D-ID moderat". Aquests resultants mostraven que la realització de dietes i la depressió eren útils en l'anàlisi i identificació de subtipus en els TCA.

En **l'estudi 3** s'exploraven aquests subtipus amb major profunditat, observant que s'obtenien els mateixos subgrups, quan ens basàvem en les puntuacions de diversos qüestionaris clínics validats. Alhora, la resposta al tractament era diferent en funció dels subtipus de TCA, presentant taxes d'abandonament més elevades el subtipus "ID-Depressiu". D'aquesta manera, els resultats estaven en concordança amb les evidències empíriques, cada vegada més grans, que indiquen la importància de la realització de dietes i la depressió comòrbida, com a factors que contribueixen a explicar les característiques diagnòstiques en els TCA. Finalment, aquestes troballes podrien tenir una rellevància destacada en la controvèrsia actual sobre les classificacions diagnòstiques en el proper DSM.

15. REFERENCES

Agras, W. S., Bryson, S., Hammer, L. D., & Kraemer, H. C. (2007). Childhood risk factors for thin body preoccupation and social pressure to be thin. *J Am Acad Child Adolesc Psychiatry, 46*(2), 171-178.

Aguera, Z., Krug, I., Sanchez, I., Granero, R., Penelo, E., Penas-Lledo, E., et al. (2012). Personality Changes in Bulimia Nervosa after a Cognitive Behaviour Therapy. *Eur Eat Disord Rev*.

Albert, U., Venturello, S., Maina, G., Ravizza, L., & Bogetto, F. (2001). Bulimia nervosa with and without obsessive-compulsive syndromes. *Compr Psychiatry, 42*(6), 456-460.

Altman, S. E., & Shankman, S. A. (2009). What is the association between obsessive-compulsive disorder and eating disorders? *Clin Psychol Rev, 29*(7), 638-646.

Alvarez-Moya, E. M., Jimenez-Murcia, S., Granero, R., Vallejo, J., Krug, I., Bulik, C. M., et al. (2007). Comparison of personality risk factors in bulimia nervosa and pathological gambling. *Compr Psychiatry, 48*(5), 452-457.

Anderluh, M., Tchanturia, K., Rabe-Hesketh, S., Collier, D., & Treasure, J. (2009). Lifetime course of eating disorders: design and validity testing of a new strategy to define the eating disorders phenotype. *Psychol Med, 39*(1), 105-114.

Anderluh, M. B., Tchanturia, K., Rabe-Hesketh, S., & Treasure, J. (2003). Childhood obsessive-compulsive personality traits in adult women with eating disorders: defining a broader eating disorder phenotype. *Am J Psychiatry, 160*(2), 242-247.

APA. (2000). *DSM-IV-TR: Diagnostic and Statistical Manual of Mental Disorders (4th Ed. Revised).* . Washington, DC: American Psychiatric Association.

Austin, S. B., Haines, J., & Veugelers, P. J. (2009). Body satisfaction and body weight: gender differences and sociodemographic determinants. *BMC Public Health, 9*, 313.

Bailer, U. F., Price, J. C., Meltzer, C. C., Mathis, C. A., Frank, G. K., Weissfeld, L., et al. (2004). Altered 5-HT(2A) receptor binding after recovery from bulimia-type anorexia nervosa: relationships to harm avoidance and drive for thinness. *Neuropsychopharmacology, 29*(6), 1143-1155.

Bardone-Cone, A. M., Wonderlich, S. A., Frost, R. O., Bulik, C. M., Mitchell, J. E., Uppala, S., et al. (2007). Perfectionism and eating disorders: current status and future directions. *Clin Psychol Rev, 27*(3), 384-405.

Bayle, F. J., Chignon, J. M., Ades, J., & Loo, H. (1996). [Alternating addictions: apropos of 3 cases]. *Encephale, 22*(4), 293-297.

Becker, A. E., Eddy, K. T., & Perloe, A. (2009). Clarifying criteria for cognitive signs and symptoms for eating disorders in DSM-V. *Int J Eat Disord, 42*(7), 611-619.

Berkman, N. D., Lohr, K. N., & Bulik, C. M. (2007). Outcomes of eating disorders: a systematic review of the literature. *Int J Eat Disord, 40*(4), 293-309.

Birch, L. L., & Fisher, J. O. (1998). Development of eating behaviors among children and adolescents. *Pediatrics, 101*(3 Pt 2), 539-549.

Blodgett Salafia, E. H., Gondoli, D.M., Corning, A.F., McEnery, A.M., and Grundy, A.M. . (2000). Psychological Distress as a Mediator of the Relationship Between Perceived Maternal Parenting and Normative Maladaptive Eating Among Adolescent Girls. *Journal of Counselling Psychology, 54*, 434-446.

Bruch, H. (1973). Thin fat people. *J Am Med Womens Assoc, 28*(4), 187-188 passim
.

Bulik, C. M. (1987). Alcohol use and depression in women with bulimia. *Am J Drug Alcohol Abuse, 13*(3), 343-355.

Bulik, C. M., Baucom, D. H., Kirby, J. S., & Pisetsky, E. Uniting Couples (in the treatment of) Anorexia Nervosa (UCAN). *Int J Eat Disord, 44*(1), 19-28.

Bulik, C. M., Berkman, N. D., Brownley, K. A., Sedway, J. A., & Lohr, K. N. (2007). Anorexia nervosa treatment: a systematic review of randomized controlled trials. *Int J Eat Disord, 40*(4), 310-320.

Bulik, C. M., Klump, K. L., Thornton, L., Kaplan, A. S., Devlin, B., Fichter, M. M., et al. (2004). Alcohol use disorder comorbidity in eating disorders: a multicenter study. *J Clin Psychiatry, 65*(7), 1000-1006.

Bulik, C. M., Sullivan, P. F., Carter, F. A., & Joyce, P. R. (1997). Lifetime comorbidity of alcohol dependence in women with bulimia nervosa. *Addict Behav, 22*(4), 437-446.

Bulik, C. M., Sullivan, P. F., & Joyce, P. R. (1999). Temperament, character and suicide attempts in anorexia nervosa, bulimia nervosa and major depression. *Acta Psychiatr Scand, 100*(1), 27-32.

Bulik, C. M., Sullivan, P. F., Joyce, P. R., & Carter, F. A. (1995). Temperament, character, and personality disorder in bulimia nervosa. *J Nerv Ment Dis, 183*(9), 593-598.

Bulik, C. M., Sullivan, P. F., Joyce, P. R., Carter, F. A., & McIntosh, V. V. (1998). Predictors of 1-year treatment outcome in bulimia nervosa. *Compr Psychiatry, 39*(4), 206-214.

Bulik, C. M., Sullivan, P. F., & Kendler, K. S. (2002). Medical and psychiatric morbidity in obese women with and without binge eating. *Int J Eat Disord, 32*(1), 72-78.

Bulik, C. M., Thornton, L., Pinheiro, A. P., Plotnicov, K., Klump, K. L., Brandt, H., et al. (2008). Suicide attempts in anorexia nervosa. *Psychosom Med, 70*(3), 378-383.

Calero-Elvira, A., Krug, I., Davis, K., Lopez, C., Fernandez-Aranda, F., & Treasure, J. (2009). Meta-analysis on drugs in people with eating disorders. *Eur Eat Disord Rev, 17*(4), 243-259.

Cassin, S. E., & von Ranson, K. M. (2005). Personality and eating disorders: a decade in review. *Clin Psychol Rev, 25*(7), 895-916.

Castellini, G., Lo Sauro, C., Mannucci, E., Ravaldi, C., Rotella, C. M., Faravelli, C., et al. (2011). Diagnostic crossover and outcome predictors in eating disorders according to DSM-IV and DSM-V proposed criteria: a 6-year follow-up study. *Psychosom Med, 73*(3), 270-279.

Cervera, S., Lahortiga, F., Martinez-Gonzalez, M. A., Gual, P., de Irala-Estevez, J., & Alonso, Y. (2003). Neuroticism and low self-esteem as risk factors for incident eating disorders in a prospective cohort study. *Int J Eat Disord, 33*(3), 271-280.

Claes, L., Muller, A., Norre, J., Van Assche, L., Wonderlich, S., & Mitchell, J. E. (2012). The relationship among compulsive buying, compulsive internet use and temperament in a sample of female patients with eating disorders. *Eur Eat Disord Rev, 20*(2), 126-131.

Collier, D. A., & Treasure, J. L. (2004). The aetiology of eating disorders. *Br J Psychiatry, 185*, 363-365.

Connan, F., Troop, N., Landau, S., Campbell, I. C., & Treasure, J. (2007). Poor social comparison and the tendency to submissive behavior in anorexia nervosa. *Int J Eat Disord, 40*(8), 733-739.

Cooke, L. J., Haworth, C. M., & Wardle, J. (2007). Genetic and environmental influences on children's food neophobia. *Am J Clin Nutr, 86*(2), 428-433.

Cooper, M. J., Wells, A., & Todd, G. (2004). A cognitive model of bulimia nervosa. *Br J Clin Psychol, 43*(Pt 1), 1-16.

Corstorphine, E., Waller, G., Lawson, R., & Ganis, C. (2007). Trauma and multi-impulsivity in the eating disorders. *Eat Behav, 8*(1), 23-30.

Dalle Grave, R., & Calugi, S. (2007). Eating disorder not otherwise specified in an inpatient unit: the impact of altering the DSM-IV criteria for anorexia and bulimia nervosa. *Eur Eat Disord Rev, 15*(5), 340-349.

Davis, C., Katzman, D. K., Kaptein, S., Kirsh, C., Brewer, H., Kalmbach, K., et al. (1997). The prevalence of high-level exercise in the eating disorders: etiological implications. *Compr Psychiatry, 38*(6), 321-326.

Day, J., Schmidt, U., Collier, D., Perkins, S., Van den Eynde, F., Treasure, J., et al. (2011). Risk factors, correlates, and markers in early-onset bulimia nervosa and EDNOS. *Int J Eat Disord, 44*(4), 287-294.

Day, J., Ternouth, A., & Collier, D. A. (2009). Eating disorders and obesity: two sides of the same coin? *Epidemiol Psichiatr Soc, 18*(2), 96-100.

de Zwaan, M., & Friederich, H. C. (2006). [Binge eating disorder]. *Ther Umsch, 63*(8), 529-533.

de Zwaan, M., & Herzog, W. (2011). [Diagnostic criteria for eating disorders: what will DSM-5 feature?]. *Nervenarzt, 82*(9), 1100-1106.

Diaz Marsa, M., Carrasco Perera, J. L., Prieto Lopez, R., & Saiz Ruiz, J. (2000). [Role of personality in eating behavior disorders]. *Actas Esp Psiquiatr, 28*(8), 29-36.

Dubois, L., Farmer, A., Girard, M., Peterson, K., & Tatone-Tokuda, F. (2007). Problem eating behaviors related to social factors and body weight in preschool children: A longitudinal study. *Int J Behav Nutr Phys Act, 4*, 9.

Enten, R. S., & Golan, M. (2009). Parenting styles and eating disorder pathology. *Appetite, 52*(3), 784-787.

Fairburn, C. G., Cooper, Z., Doll, H. A., & Welch, S. L. (1999). Risk factors for anorexia nervosa: three integrated case-control comparisons. *Arch Gen Psychiatry, 56*(5), 468-476.

Fairburn, C. G., Cooper, Z., & Shafran, R. (2003). Cognitive behaviour therapy for eating disorders: a "transdiagnostic" theory and treatment. *Behaviour Research and Therapy, 41*(5), 509-528.

Fairburn, C. G., Doll, H. A., Welch, S. L., Hay, P. J., Davies, B. A., & O'Connor, M. E. (1998). Risk factors for binge eating disorder: a community-based, case-control study. *Arch Gen Psychiatry, 55*(5), 425-432.

Fairburn, C. G., & Harrison, P. J. (2003). Eating disorders. *Lancet, 361*(9355), 407-416.

Fairburn, C. G., Welch, S. L., Doll, H. A., Davies, B. A., & O'Connor, M. E. (1997). Risk factors for bulimia nervosa. A community-based case-control study. *Arch Gen Psychiatry, 54*(6), 509-517.

Fassino, S., Piero, A., Tomba, E., & Abbate-Daga, G. (2009). Factors associated with dropout from treatment for eating disorders: a comprehensive literature review. *BMC Psychiatry, 9*, 67.

Fava, M., Abraham, M., Clancy-Colecchi, K., Pava, J. A., Matthews, J., & Rosenbaum, J. F. (1997). Eating disorder symptomatology in major depression. *J Nerv Ment Dis, 185*(3), 140-144.

Fernandez-Aranda, F., Dahme, B. and Meermann, R. (1999). Body image in eating disorders and analysis of its relevance: a preliminary study. . *Journal of Psychosomatic Research, 47*, 419-428.

Fernandez-Aranda, F., Jimenez-Murcia, S., Alvarez-Moya, E. M., Granero, R., Vallejo, J., & Bulik, C. M. (2006). Impulse control disorders in eating disorders: clinical and therapeutic implications. *Compr Psychiatry, 47*(6), 482-488.

Fernandez-Aranda, F., Krug, I., Granero, R., Ramon, J. M., Badia, A., Gimenez, L., et al. (2007). Individual and family eating patterns during childhood and early adolescence: an analysis of associated eating disorder factors. *Appetite, 49*(2), 476-485.

Fernandez-Aranda, F., Pinheiro, A. P., Thornton, L. M., Berrettini, W. H., Crow, S., Fichter, M. M., et al. (2008). Impulse control disorders in women with eating disorders. *Psychiatry Res, 157*(1-3), 147-157.

Fernandez-Aranda, F., Pinheiro, A. P., Tozzi, F., Thornton, L. M., Fichter, M. M., Halmi, K. A., et al. (2007). Symptom profile of major depressive disorder in women with eating disorders. *Aust N Z J Psychiatry, 41*(1), 24-31.

Fernandez, F., Probst, M., Meermann, R., & Vandereycken, W. (1994). Body size estimation and body dissatisfaction in eating disorder patients and normal controls. *Int J Eat Disord, 16*(3), 307-310.

Ferreira, C., Pinto-Gouveia, J., & Duarte, C. Physical appearance as a measure of social ranking: The role of a new scale to understand the relationship between weight and dieting. *Clin Psychol Psychother*.

Forcano, L., Alvarez, E., Santamaria, J. J., Jimenez-Murcia, S., Granero, R., Penelo, E., et al. (2011). Suicide attempts in anorexia nervosa subtypes. *Compr Psychiatry, 52*(4), 352-358.

Forcano, L., Fernandez-Aranda, F., Alvarez-Moya, E., Bulik, C., Granero, R., Gratacos, M., et al. (2009). Suicide attempts in bulimia nervosa: personality and psychopathological correlates. *Eur Psychiatry, 24*(2), 91-97.

Gila, A., Castro, J., Gómez, M.J. and Toro, J. . (2005). Social and Body Self-Esteem in Adolescents with Eating Disorders. . *International Journal of Psychology and Psychological Therapy, 1*, 63-71.

Godart, N., Berthoz, S., Perdereau, F., & Jeammet, P. (2006). Comorbidity of anxiety with eating disorders and OCD. *Am J Psychiatry, 163*(2), 326; author reply 327-329.

Godart, N. T., Flament, M. F., Curt, F., Perdereau, F., Lang, F., Venisse, J. L., et al. (2003). Anxiety disorders in subjects seeking treatment for eating disorders: a DSM-IV controlled study. *Psychiatry Res, 117*(3), 245-258.

Godart, N. T., Flament, M. F., Perdereau, F., & Jeammet, P. (2002). Comorbidity between eating disorders and anxiety disorders: a review. *Int J Eat Disord, 32*(3), 253-270.

Golan, M., & Crow, S. (2004). Parents are key players in the prevention and treatment of weight-related problems. *Nutr Rev, 62*(1), 39-50.

Gratacos, M., Gonzalez, J. R., Mercader, J. M., de Cid, R., Urretavizcaya, M., & Estivill, X. (2007). Brain-derived neurotrophic factor Val66Met and psychiatric disorders: meta-analysis of case-control studies confirm association to substance-related disorders, eating disorders, and schizophrenia. *Biol Psychiatry, 61*(7), 911-922.

Griffiths, R. A., Beumont, P. J., Giannakopoulos, E., Russell, J., Schotte, D., Thornton, C., et al. (1999). Measuring self-esteem in dieting disordered patients: the validity of the Rosenberg and Coopersmith contrasted. *Int J Eat Disord, 25*(2), 227-231.

Grilo, C. M., Sanislow, C. A., Shea, M. T., Skodol, A. E., Stout, R. L., Pagano, M. E., et al. (2003). The natural course of bulimia nervosa and eating disorder not otherwise specified is not influenced by personality disorders. *Int J Eat Disord, 34*(3), 319-330.

Grubb, H. J., Sellers, M. I., & Waligroski, K. (1993). Factors related to depression and eating disorders: self-esteem, body image, and attractiveness. *Psychol Rep, 72*(3 Pt 1), 1003-1010.

Gual, P., Perez-Gaspar, M., Martinez-Gonzalez, M. A., Lahortiga, F., de Irala-Estevez, J., & Cervera-Enguix, S. (2002). Self-esteem, personality, and eating disorders: baseline assessment of a prospective population-based cohort. *Int J Eat Disord, 31*(3), 261-273.

Gunnard, K., Krug, I., Jimenez-Murcia, S., Penelo, E., Granero, R., Treasure, J., et al. (2011). Relevance of Social and Self-standards in Eating Disorders. *Eur Eat Disord Rev*.

Hall, J. R., & McGill, J. C. (1986). Hypnobehavioral treatment of self-destructive behavior: trichotillomania and bulimia in the same patient. *Am J Clin Hypn, 29*(1), 39-46.

Hartmann, A., Weber, S., Herpertz, S., & Zeeck, A. (2011). Psychological treatment for anorexia nervosa: a meta-analysis of standardized mean change. *Psychother Psychosom, 80*(4), 216-226.

Haslam, M., Mountford, V., Meyer, C., & Waller, G. (2008). Invalidating childhood environments in anorexia and bulimia nervosa. *Eat Behav, 9*(3), 313-318.

Hebebrand, J., & Hinney, A. (2009). Environmental and genetic risk factors in obesity. *Child Adolesc Psychiatr Clin N Am, 18*(1), 83-94.

Herpertz-Dahlmann, B., Muller, B., Herpertz, S., Heussen, N., Hebebrand, J., & Remschmidt, H. (2001). Prospective 10-year follow-up in adolescent anorexia nervosa--course, outcome, psychiatric comorbidity, and psychosocial adaptation. *J Child Psychol Psychiatry, 42*(5), 603-612.

Higgins, E. T. (1987). Self-discrepancy: a theory relating self and affect. *Psychol Rev, 94*(3), 319-340.

Hoek, H. W. (2006). Incidence, prevalence and mortality of anorexia nervosa and other eating disorders. *Curr Opin Psychiatry, 19*(4), 389-394.

Huh, D., Tristan, J., Wade, E., & Stice, E. (2006). Does Problem Behavior Elicit Poor Parenting?: A Prospective Study of Adolescent Girls. *J Adolesc Res, 21*(2), 185-204.

Jacobi, C., Hayward, C., de Zwaan, M., Kraemer, H. C., & Agras, W. S. (2004). Coming to terms with risk factors for eating disorders: application of risk terminology and suggestions for a general taxonomy. *Psychol Bull, 130*(1), 19-65.

Jacobi, C., Volker, U., Trockel, M. T., & Taylor, C. B. (2012). Effects of an Internet-based intervention for subthreshold eating disorders: A randomized controlled trial. *Behav Res Ther, 50*(2), 93-99.

Jacobi, F., Wittchen, H. U., Holting, C., Hofler, M., Pfister, H., Muller, N., et al. (2004). Prevalence, co-morbidity and correlates of mental disorders in the general population: results from the German Health Interview and Examination Survey (GHS). *Psychol Med, 34*(4), 597-611.

Jacquemont, S., Reymond, A., Zufferey, F., Harewood, L., Walters, R. G., Kutalik, Z., et al. (2011). Mirror extreme BMI phenotypes associated with gene dosage at the chromosome 16p11.2 locus. *Nature, 478*(7367), 97-102.

Janowitz, D., Grabe, H. J., Ruhrmann, S., Ettelt, S., Buhtz, F., Hochrein, A., et al. (2009). Early onset of obsessive-compulsive disorder and associated comorbidity. *Depress Anxiety, 26*(11), 1012-1017.

Jimenez-Murcia, S., Fernandez-Aranda, F., Raich, R. M., Alonso, P., Krug, I., Jaurrieta, N., et al. (2007). Obsessive-compulsive and eating disorders: comparison of clinical and personality features. *Psychiatry Clin Neurosci, 61*(4), 385-391.

Johnston, E., Johnson, S., McLeod, P., & Johnston, M. (2004). The relation of body mass index to depressive symptoms. *Can J Public Health, 95*(3), 179-183.

Johnston, J. M. (2004). Eating disorders and childhood obesity: who are the real gluttons? *Cmaj, 171*(12), 1459-1460.

Johnston, O., Reilly, J., & Kremer, J. (2011). Excessive exercise: from quantitative categorisation to a qualitative continuum approach. *Eur Eat Disord Rev, 19*(3), 237-248.

Joos, A. A., Gille, M., Hartmann, A., Unterbrink, T., Wetzler-Burmeister, E., Scheidt, C., et al. (2012). Emotional Perception in Patients with Eating Disorders in Comparison with Depressed Patients. *Eur Eat Disord Rev*.

Jordan, J., Joyce, P. R., Carter, F. A., Horn, J., McIntosh, V. V., Luty, S. E., et al. (2008). Specific and nonspecific comorbidity in anorexia nervosa. *Int J Eat Disord, 41*(1), 47-56.

Kaye, W. H., Bulik, C. M., Thornton, L., Barbarich, N., & Masters, K. (2004). Comorbidity of anxiety disorders with anorexia and bulimia nervosa. *Am J Psychiatry, 161*(12), 2215-2221.

Keel, P. K., Brown, T. A., Holm-Denoma, J., & Bodell, L. P. (2011). Comparison of DSM-IV versus proposed DSM-5 diagnostic criteria for eating disorders: reduction of eating disorder not otherwise specified and validity. *Int J Eat Disord, 44*(6), 553-560.

Keel, P. K., & Mitchell, J. E. (1997). Outcome in bulimia nervosa. *Am J Psychiatry, 154*(3), 313-321.

Keel, P. K., Mitchell, J. E., Davis, T. L., Fieselman, S., & Crow, S. J. (2000). Impact of definitions on the description and prediction of bulimia nervosa outcome. *Int J Eat Disord, 28*(4), 377-386.

Kessler, R. C., Amminger, G. P., Aguilar-Gaxiola, S., Alonso, J., Lee, S., & Ustun, T. B. (2007). Age of onset of mental disorders: a review of recent literature. *Curr Opin Psychiatry, 20*(4), 359-364.

Kong, S., & Bernstein, K. (2009). Childhood trauma as a predictor of eating psychopathology and its mediating variables in patients with eating disorders. *J Clin Nurs, 18*(13), 1897-1907.

Kordy, H., Kramer, B., Palmer, R. L., Papezova, H., Pellet, J., Richard, M., et al. (2002). Remission, recovery, relapse, and recurrence in eating disorders: conceptualization and illustration of a validation strategy. *J Clin Psychol, 58*(7), 833-846.

Kral, T. V., & Faith, M. S. (2009). Influences on child eating and weight development from a behavioral genetics perspective. *J Pediatr Psychol, 34*(6), 596-605.

Krug, I., Pinheiro, A. P., Bulik, C., Jimenez-Murcia, S., Granero, R., Penelo, E., et al. (2009). Lifetime substance abuse, family history of alcohol abuse/dependence and novelty seeking in eating disorders: comparison study of eating disorder subgroups. *Psychiatry Clin Neurosci, 63*(1), 82-87.

Krug, I., Treasure, J., Anderluh, M., Bellodi, L., Cellini, E., di Bernardo, M., et al. (2008). Present and lifetime comorbidity of tobacco, alcohol and drug use in eating disorders: a European multicenter study. *Drug Alcohol Depend, 97*(1-2), 169-179.

Lejoyeux, M., Haberman, N., Solomon, J., & Ades, J. (1999). Comparison of buying behavior in depressed patients presenting with or without compulsive buying. *Compr Psychiatry, 40*(1), 51-56.

Lilenfeld, L. R., Kaye, W. H., Greeno, C. G., Merikangas, K. R., Plotnicov, K., Pollice, C., et al. (1998). A controlled family study of anorexia nervosa and bulimia nervosa: psychiatric disorders in first-degree relatives and effects of proband comorbidity. *Arch Gen Psychiatry, 55*(7), 603-610.

Lilenfeld, L. R., Wonderlich, S., Riso, L. P., Crosby, R., & Mitchell, J. (2006). Eating disorders and personality: a methodological and empirical review. *Clin Psychol Rev, 26*(3), 299-320.

Lopez, C., Tchanturia, K., Stahl, D., & Treasure, J. (2008). Central coherence in eating disorders: a systematic review. *Psychol Med, 38*(10), 1393-1404.

Machado, P. P., Machado, B. C., Goncalves, S., & Hoek, H. W. (2007). The prevalence of eating disorders not otherwise specified. *Int J Eat Disord, 40*(3), 212-217.

Mancilla-Diaz, J. M., Franco-Paredes, K., Vazquez-Arevalo, R., Lopez-Aguilar, X., Alvarez-Rayon, G. L., & Tellez-Giron, M. T. (2007). A two-stage epidemiologic study on prevalence of eating disorders in female university students in Mexico. *Eur Eat Disord Rev, 15*(6), 463-470.

Marino, M. F., & Zanarini, M. C. (2001). Relationship between EDNOS and its subtypes and borderline personality disorder. *Int J Eat Disord, 29*(3), 349-353.

McCarthy, M. (1990). The thin ideal, depression and eating disorders in women. *Behav Res Ther, 28*(3), 205-215.

McElroy, S. L., Keck, P. E., Jr., & Phillips, K. A. (1995). Kleptomania, compulsive buying, and binge-eating disorder. *J Clin Psychiatry, 56 Suppl 4*, 14-26; discussion 27.

Mendelson, B. K., McLaren, L., Gauvin, L., & Steiger, H. (2002). The relationship of self-esteem and body esteem in women with and without eating disorders. *Int J Eat Disord, 31*(3), 318-323.

Mercader, J. M., Ribases, M., Gratacos, M., Gonzalez, J. R., Bayes, M., de Cid, R., et al. (2007). Altered brain-derived neurotrophic factor blood levels and gene variability are associated with anorexia and bulimia. *Genes Brain Behav, 6*(8), 706-716.

Mercader, J. M., Saus, E., Aguera, Z., Bayes, M., Boni, C., Carreras, A., et al. (2008). Association of NTRK3 and its interaction with NGF suggest an altered cross-regulation of the neurotrophin signaling pathway in eating disorders. *Hum Mol Genet, 17*(9), 1234-1244.

Meyer, C., Taranis, L., & Touyz, S. (2008). Excessive exercise in the eating disorders: a need for less activity from patients and more from researchers. *Eur Eat Disord Rev, 16*(2), 81-83.

Micali, N., & Heyman, I. (2006). Comorbidity of anxiety with eating disorders and OCD. *Am J Psychiatry, 163*(2), 326-327; author reply 327-329.

Micali, N., Holliday, J., Karwautz, A., Haidvogl, M., Wagner, G., Fernandez-Aranda, F., et al. (2007). Childhood eating and weight in eating disorders: a multi-centre European study of affected women and their unaffected sisters. *Psychother Psychosom, 76*(4), 234-241.

Milos, G., Spindler, A., Ruggiero, G., Klaghofer, R., & Schnyder, U. (2002). Comorbidity of obsessive-compulsive disorders and duration of eating disorders. *Int J Eat Disord, 31*(3), 284-289.

Milos, G., Spindler, A., & Schnyder, U. (2004). Psychiatric comorbidity and Eating Disorder Inventory (EDI) profiles in eating disorder patients. *Can J Psychiatry, 49*(3), 179-184.

Mitchell, J. E. (1991). A review of the controlled trials of psychotherapy for bulimia nervosa. *J Psychosom Res, 35 Suppl 1*, 23-31.

Mitchell, J. E., Redlin, J., Wonderlich, S., Crosby, R., Faber, R., Miltenberger, R., et al. (2002). The relationship between compulsive buying and eating disorders. *Int J Eat Disord, 32*(1), 107-111.

Modestin, J., Oberson, B., & Erni, T. (1998). Possible antecedents of DSM-III-R personality disorders. *Acta Psychiatr Scand, 97*(4), 260-266.

Naylor, H., Mountford, V., & Brown, G. Beliefs about excessive exercise in eating disorders: the role of obsessions and compulsions. *Eur Eat Disord Rev, 19*(3), 226-236.

NIMH, N. I. o. M. H. (2011). Eating Disorders. (11-4901).

Nunez-Navarro, A., Aguera, Z., Krug, I., Jimenez-Murcia, S., Sanchez, I., Araguz, N., et al. (2012). Do men with eating disorders differ from women in clinics, psychopathology and personality? *Eur Eat Disord Rev, 20*(1), 23-31.

Oldershaw, A., Dejong, H., Hambrook, D., Broadbent, H., Tchanturia, K., Treasure, J., et al. (2012). Emotional Processing Following Recovery from Anorexia Nervosa. *Eur Eat Disord Rev*.

Palmer, B. (2008). Epidemiology, diagnosing, and assessing eating disorders. *Psychiatry, 7*(4), 143-146.

Park, R. J., Senior, R., & Stein, A. (2003). The offspring of mothers with eating disorders. *Eur Child Adolesc Psychiatry, 12 Suppl 1*, I110-119.

Penas-Lledo, E., Fernandez-Aranda, F., Jimenez-Murcia, S., Granero, R., Penelo, E., Soto, A., et al. (2009). Subtyping eating disordered patients along drive for thinness and depression. *Behav Res Ther, 47*(6), 513-519.

Penas-Lledo, E., Jimenez-Murcia, S., Granero, R., Penelo, E., Aguera, Z., Alvarez-Moya, E., et al. (2010). Specific eating disorder clusters based on social anxiety and novelty seeking. *J Anxiety Disord, 24*(7), 767-773.

Penelo, E., Granero, R., Krug, I., Treasure, J., Karwautz, A., Anderluh, M., et al. (2011). Factors of risk and maintenance for eating disorders: psychometric exploration of the cross-cultural questionnaire (CCQ) across five European countries. *Clin Psychol Psychother, 18* (6), 535-52.

Preti, A., Girolamo, G., Vilagut, G., Alonso, J., Graaf, R., Bruffaerts, R., et al. (2009). The epidemiology of eating disorders in six European countries: results of the ESEMeD-WMH project. *J Psychiatr Res, 43*(14), 1125-1132.

Probst, M., Vandereycken, W., Van Coppenolle, H., & Pieters, G. (1999). Body experience in eating disorders before and after treatment: a follow-up study. *Eur Psychiatry, 14*(6), 333-340.

Ribases, M., Fernandez-Aranda, F., Gratacos, M., Mercader, J. M., Casasnovas, C., Nunez, A., et al. (2008). Contribution of the serotoninergic system to anxious and depressive traits that may be partially responsible for the phenotypical variability of bulimia nervosa. *J Psychiatr Res, 42*(1), 50-57.

Ribases, M., Gratacos, M., Armengol, L., de Cid, R., Badia, A., Jimenez, L., et al. (2003). Met66 in the brain-derived neurotrophic factor (BDNF) precursor is associated with anorexia nervosa restrictive type. *Mol Psychiatry, 8*(8), 745-751.

Ribases, M., Gratacos, M., Badia, A., Jimenez, L., Solano, R., Vallejo, J., et al. (2005). Contribution of NTRK2 to the genetic susceptibility to anorexia nervosa, harm avoidance and minimum body mass index. *Mol Psychiatry, 10*(9), 851-860.

Ro, O., Martinsen, E. W., Hoffart, A., Sexton, H., & Rosenvinge, J. H. (2005). The interaction of personality disorders and eating disorders: a two-year prospective study of patients with longstanding eating disorders. *Int J Eat Disord, 38*(2), 106-111.

Rodgers, R., & Chabrol, H. (2009). Parental attitudes, body image disturbance and disordered eating amongst adolescents and young adults: a review. *Eur Eat Disord Rev, 17*(2), 137-151.

Rojo, L., Livianos, L., Conesa, L., Garcia, A., Dominguez, A., Rodrigo, G., et al. (2003). Epidemiology and risk factors of eating disorders: a two-stage epidemiologic study in a Spanish population aged 12-18 years. *Int J Eat Disord, 34*(3), 281-291.

Root, T. L., Pinheiro, A. P., Thornton, L., Strober, M., Fernandez-Aranda, F., Brandt, H., et al. (2012). Substance use disorders in women with anorexia nervosa. *Int J Eat Disord, 43*(1), 14-21.

Root, T. L., Pisetsky, E. M., Thornton, L., Lichtenstein, P., Pedersen, N. L., & Bulik, C. M. (2012). Patterns of co-morbidity of eating disorders and substance use in Swedish females. *Psychol Med, 40*(1), 105-115.

Root, T. L., Szatkiewicz, J. P., Jonassaint, C. R., Thornton, L. M., Pinheiro, A. P., Strober, M., et al. (2011). Association of candidate genes with phenotypic traits relevant to anorexia nervosa. *Eur Eat Disord Rev, 19*(6), 487-493.

Root, T. L., Thornton, L. M., Lindroos, A. K., Stunkard, A. J., Lichtenstein, P., Pedersen, N. L., et al. (2010). Shared and unique genetic and environmental influences on binge eating and night eating: a Swedish twin study. *Eat Behav, 11*(2), 92-98.

Rosenvinge, J. H., Martinussen, M., & Ostensen, E. (2000). The comorbidity of eating disorders and personality disorders: a meta-analytic review of studies published between 1983 and 1998. *Eat Weight Disord, 5*(2), 52-61.

Rowe, S. L., Jordan, J., McIntosh, V. V., Carter, F. A., Bulik, C. M., & Joyce, P. R. (2008). Impact of borderline personality disorder on bulimia nervosa. *Aust N Z J Psychiatry, 42*(12), 1021-1029.

Ruggiero, G. M., Bertelli, S., Boccalari, L., Centorame, F., Ditucci, A., La Mela, C., et al. (2008). The influence of stress on the relationship between cognitive variables and measures of eating disorders (in healthy female university students): a quasi-experimental study. *Eat Weight Disord, 13*(3), 142-148.

Russell, G. (1979). Bulimia nervosa: an ominous variant of anorexia nervosa. *Psychol Med, 9*(3), 429-448.

Sancho, C., Arija, M. V., & Canals, J. (2008). Personality in non-clinical adolescents with eating disorders. *Eur Eat Disord Rev, 16*(2), 133-138.

Schmidt, U. (2005). Epidemiology and aetiology of eating disorders. *Psychiatry, 4*(4), 5-9.

Schmidt, U., Lee, S., Perkins, S., Eisler, I., Treasure, J., Beecham, J., et al. (2008). Do adolescents with eating disorder not otherwise specified or full-syndrome bulimia nervosa differ in clinical severity, comorbidity, risk factors, treatment outcome or cost? *Int J Eat Disord, 41*(6), 498-504.

Sheffield, A., Waller, G., Emanuelli, F., Murray, J., & Meyer, C. (2009). Do schema processes mediate links between parenting and eating pathology? *Eur Eat Disord Rev, 17*(4), 290-300.

Silberg, J. L., & Bulik, C. M. (2005). The developmental association between eating disorders symptoms and symptoms of depression and anxiety in juvenile twin girls. *J Child Psychol Psychiatry, 46*(12), 1317-1326.

Silvera, D. H., Bergersen, T. D., Bjorgum, L., Perry, J. A., Rosenvinge, J. H., & Holte, A. (1998). Analyzing the relation between self-esteem and eating disorders: differential effects of self-liking and self-competence. *Eat Weight Disord, 3*(2), 95-99.

Sobel, S. V. (1996). What's New in the Treatment of Anorexia Nervosa and Bulimia? *Medscape Womens Health, 1*(9), 5.

Steiger, H., Gauvin, L., Engelberg, M. J., Ying Kin, N. M., Israel, M., Wonderlich, S. A., et al. (2005). Mood- and restraint-based antecedents to binge episodes in bulimia nervosa: possible influences of the serotonin system. *Psychol Med, 35*(11), 1553-1562.

Steiner, H., Kwan, W., Shaffer, T. G., Walker, S., Miller, S., Sagar, A., et al. (2003). Risk and protective factors for juvenile eating disorders. *Eur Child Adolesc Psychiatry, 12 Suppl 1*, I38-36.

Steinhausen, H. C. (2002). The outcome of anorexia nervosa in the 20th century. *Am J Psychiatry, 159*(8), 1284-1293.

Stice, E. (2002). Risk and maintenance factors for eating pathology: a meta-analytic review. *Psychol Bull, 128*(5), 825-848.

Stice, E., Agras, W. S., Telch, C. F., Halmi, K. A., Mitchell, J. E., & Wilson, T. (2001). Subtyping binge eating-disordered women along dieting and negative affect dimensions. *Int J Eat Disord, 30*(1), 11-27.

Stice, E., Marti, C. N., & Durant, S. (2011). Risk factors for onset of eating disorders: evidence of multiple risk pathways from an 8-year prospective study. *Behav Res Ther, 49*(10), 622-627.

Stice, E., Presnell, K., & Bearman, S. K. (2001). Relation of early menarche to depression, eating disorders, substance abuse, and comorbid psychopathology among adolescent girls. *Dev Psychol, 37*(5), 608-619.

Stice, E., & Whitenton, K. (2002). Risk factors for body dissatisfaction in adolescent girls: a longitudinal investigation. *Dev Psychol, 38*(5), 669-678.

Striegel-Moore, R. H., Cachelin, F. M., Dohm, F. A., Pike, K. M., Wilfley, D. E., & Fairburn, C. G. (2001). Comparison of binge eating disorder and bulimia nervosa in a community sample. *Int J Eat Disord, 29*(2), 157-165.

Striegel-Moore, R. H., & Franko, D. L. (2003). Epidemiology of binge eating disorder. *Int J Eat Disord, 34 Suppl*, S19-29.

Striegel-Moore, R. H., McMahon, R. P., Biro, F. M., Schreiber, G., Crawford, P. B., & Voorhees, C. (2001). Exploring the relationship between timing of menarche and eating disorder symptoms in Black and White adolescent girls. *Int J Eat Disord, 30*(4), 421-433.

Strober, M. (1980). Personality and symptomatological features in young, nonchronic anorexia nervosa patients. *J Psychosom Res, 24*(6), 353-359.

Strober, M., Freeman, R., Lampert, C., & Diamond, J. (2007). The association of anxiety disorders and obsessive compulsive personality disorder with anorexia nervosa: evidence from a family study with discussion of nosological and neurodevelopmental implications. *Int J Eat Disord, 40 Suppl*, S46-51.

Sulek, S., Lacinova, Z., Dolinkova, M., & Haluzik, M. (2007). Genetic polymorphisms as a risk factor for anorexia nervosa. *Prague Med Rep, 108*(3), 215-225.

Swinbourne, J., Hunt, C., Abbott, M., Russell, J., St Clare, T., & Touyz, S. (2012). The comorbidity between eating disorders and anxiety disorders: prevalence in an eating disorder sample and anxiety disorder sample. *Aust N Z J Psychiatry, 46*(2), 118-131.

Taylor, C. B., Bryson, S., Celio Doyle, A. A., Luce, K. H., Cunning, D., Abascal, L. B., et al. (2006). The adverse effect of negative comments about weight and shape from family and siblings on women at high risk for eating disorders. *Pediatrics, 118*(2), 731-738.

Thompson-Brenner, H., Eddy, K. T., Franko, D. L., Dorer, D. J., Vashchenko, M., Kass, A. E., et al. (2008). A personality classification system for eating disorders: a longitudinal study. *Compr Psychiatry, 49*(6), 551-560.

Tiggemann, M. (2000). Dieting and cognitive style: the role of current and past dieting behaviour and cognitions. *J Health Psychol, 5*(1), 17-24.

Toro, J., Gomez-Peresmitre, G., Sentis, J., Valles, A., Casula, V., Castro, J., et al. (2006). Eating disorders and body image in Spanish and Mexican female adolescents. *Soc Psychiatry Psychiatr Epidemiol, 41*(7), 556-565.

Treasure, J., Cardi, V., & Kan, C. (2012). Eating in eating disorders. *Eur Eat Disord Rev, 20*(1), e42-49.

Treasure, J., Whitaker, W., Todd, G., & Whitney, J. (2012). A description of multiple family workshops for carers of people with anorexia nervosa. *Eur Eat Disord Rev, 20*(1), e17-22.

Troop, N. A., Allan, S., Treasure, J. L., & Katzman, M. (2003). Social comparison and submissive behaviour in eating disorder patients. *Psychol Psychother, 76*(Pt 3), 237-249.

Turner, H., Bryant-Waugh, R., & Peveler, R. (2009). An approach to sub-grouping the eating disorder population: adding attachment and coping style. *Eur Eat Disord Rev, 17*(4), 269-280.

Vanderlinden, J., Dalle Grave, R., Fernandez, F., Vandereycken, W., Pieters, G., & Noorduin, C. (2004). Which factors do provoke binge eating? An exploratory study in eating disorder patients. *Eat Weight Disord, 9*(4), 300-305.

Vanderlinden, J., Kamphuis, J. H., Slagmolen, C., Wigboldus, D., Pieters, G., & Probst, M. (2009). Be kind to your eating disorder patients: the impact of positive and negative feedback on the explicit and implicit self-esteem of female patients with eating disorders. *Eat Weight Disord, 14*(4), e237-242.

Vignini, A., D'Angelo, M., Nanetti, L., Camilloni, M. A., Cester, A. M., Faloia, E., et al. (2010). Anorexia nervosa: a role for L-arginine supplementation in cardiovascular risk factors? *Int J Eat Disord, 43*(5), 464-471.

Villarejo, C., Fernandez-Aranda, F., Jimenez-Murcia, S., Penas-Lledo, E., Granero, R., Penelo, E., et al. (2012). Lifetime Obesity in Patients with Eating Disorders: Increasing Prevalence, Clinical and Personality Correlates. *Eur Eat Disord Rev*.

Wade, T. D., Bulik, C. M., Neale, M., & Kendler, K. S. (2000). Anorexia nervosa and major depression: shared genetic and environmental risk factors. *Am J Psychiatry, 157*(3), 469-471.

Wade, T. D., Bulik, C. M., Prescott, C. A., & Kendler, K. S. (2004). Sex influences on shared risk factors for bulimia nervosa and other psychiatric disorders. *Arch Gen Psychiatry, 61*(3), 251-256.

Wade, T. D., Treasure, J., & Schmidt, U. (2011). A case series evaluation of the Maudsley Model for treatment of adults with anorexia nervosa. *Eur Eat Disord Rev*. *19* (5), 382–389.

Waller, G. (1991). Sexual abuse as a factor in eating disorders. *Br J Psychiatry, 159*, 664-671.

Waller, G. (1997). Drop-out and failure to engage in individual outpatient cognitive behavior therapy for bulimic disorders. *Int J Eat Disord, 22*(1), 35-41.

Waller, G. (1998). Perceived control in eating disorders: relationship with reported sexual abuse. *Int J Eat Disord, 23*(2), 213-216.

Weiselberg, E. C., Gonzalez, M., & Fisher, M. (2011). Eating disorders in the twenty-first century. *Minerva Ginecol, 63*(6), 531-545.

Westerberg-Jacobson, J., Ghaderi, A., & Edlund, B. (2011). A Longitudinal Study of Motives for Wishing to Be Thinner and Weight-control Practices in 7- to 18-Year-Old Swedish Girls. *Eur Eat Disord Rev*. DOI: 10.1002/erv.1145

Wonderlich, S., & Mitchell, J. E. (2001). The role of personality in the onset of eating disorders and treatment implications. *Psychiatr Clin North Am, 24*(2), 249-258.

Wonderlich, S. A., Crosby, R. D., Engel, S. G., Mitchell, J. E., Smyth, J., & Miltenberger, R. (2007). Personality-based clusters in bulimia nervosa: differences in clinical variables and ecological momentary assessment. *J Pers Disord, 21*(3), 340-357.

Wu, K. D. (2008). Eating disorders and obsessive-compulsive disorder: A dimensional approach to purported relations. *J Anxiety Disord, 22*(8), 1412-1420.

Young, E. A., Clopton, J. R., & Bleckley, M. K. (2004). Perfectionism, low self-esteem, and family factors as predictors of bulimic behavior. *Eat Behav, 5*(4), 273-283.

Zeeck, A., Stelzer, N., Linster, H. W., Joos, A., & Hartmann, A. (2011). Emotion and eating in binge eating disorder and obesity. *Eur Eat Disord Rev*. DOI: 10.1002/erv.1066

16. APPENDIX

Bellvitge Hospital

Unidad de Trastornos
de la Conducta Alimentaria

EAT-40

Instrucciones: La presente escala mide distintas actitudes, sentimientos y conductas.
La mayoría de las preguntas se refieren a la comida y hábitos alimentarios.
No hay respuestas correctas o incorrectas, por favor, sea completamente sincero en sus respuestas. Los resultados son absolutamente confidenciales.

	nunca	pocas veces	a veces	a menudo	casi siempre	siempre
1. Me gusta comer con otras personas.	❒	❒	❒	❒	❒	❒
2. Preparo comidas para otros, pero yo no me las como.	❒	❒	❒	❒	❒	❒
3. Me pongo nervioso/a cuando se acerca la hora de las comidas.	❒	❒	❒	❒	❒	❒
4. Me da mucho miedo pesar demasiado.	❒	❒	❒	❒	❒	❒
5. Procuro no comer aunque tenga hambre.	❒	❒	❒	❒	❒	❒
6. Me preocupo mucho por la comida.	❒	❒	❒	❒	❒	❒
7. A veces me he «atracado» de comida, sintiendo que era incapaz de parar de comer.	❒	❒	❒	❒	❒	❒
8. Corto mis alimentos en trozos pequeños.	❒	❒	❒	❒	❒	❒
9. Tengo en cuenta las calorías que tienen los alimentos.	❒	❒	❒	❒	❒	❒
10. Evito, especialmente, comer alimentos con muchos hidratos de carbono (p. ej. pan, arroz, patatas, etc.)	❒	❒	❒	❒	❒	❒
11. Me siento lleno/a después de las comidas.	❒	❒	❒	❒	❒	❒
12. Noto que los demás preferirían que yo comiese más.	❒	❒	❒	❒	❒	❒
13. Vomito después de haber comido.	❒	❒	❒	❒	❒	❒
14. Me siento muy culpable después de comer.	❒	❒	❒	❒	❒	❒
15. Me preocupa el deseo de estar más delgado/a.	❒	❒	❒	❒	❒	❒
16. Hago mucho ejercicio para quemar calorías.	❒	❒	❒	❒	❒	❒
17. Me peso varias veces al día.	❒	❒	❒	❒	❒	❒
18. Me gusta que la ropa me quede ajustada.	❒	❒	❒	❒	❒	❒
19. Disfruto comiendo carne.	❒	❒	❒	❒	❒	❒
20. Me levanto pronto por las mañanas.	❒	❒	❒	❒	❒	❒
21. Cada día como los mismos alimentos.	❒	❒	❒	❒	❒	❒
22. Pienso en quemar calorías cuando hago ejercicio.	❒	❒	❒	❒	❒	❒

13.345-17 / gener 2004

	nunca	pocas veces	a veces	a menudo	casi siempre	siempre
23. Tengo la menstruación regular (sólo mujeres).	❒	❒	❒	❒	❒	❒
24. Los demás piensan que estoy demasiado delgado/a.	❒	❒	❒	❒	❒	❒
25. Me preocupa la idea de tener grasa en el cuerpo.	❒	❒	❒	❒	❒	❒
26. Tardo en comer más que las otras personas.	❒	❒	❒	❒	❒	❒
27. Disfruto comiendo en restaurantes.	❒	❒	❒	❒	❒	❒
28. Tomo laxantes (purgantes).	❒	❒	❒	❒	❒	❒
29. Procuro no comer alimentos con azúcar.	❒	❒	❒	❒	❒	❒
30. Como alimentos de régimen.	❒	❒	❒	❒	❒	❒
31. Siento que los alimentos controlan mi vida.	❒	❒	❒	❒	❒	❒
32. Me controlo en las comidas.	❒	❒	❒	❒	❒	❒
33. Noto que los demás me presionan para que coma.	❒	❒	❒	❒	❒	❒
34. Paso demasiado tiempo pensando y ocupándome de la comida.	❒	❒	❒	❒	❒	❒
35. Tengo estreñimiento.	❒	❒	❒	❒	❒	❒
36. Me siento incómodo/a después de comer dulces.	❒	❒	❒	❒	❒	❒
37. Me comprometo a hacer régimen.	❒	❒	❒	❒	❒	❒
38. Me gusta sentir el estómago vacío.	❒	❒	❒	❒	❒	❒
39. Disfruto probando comidas nuevas y sabrosas.	❒	❒	❒	❒	❒	❒
40. Tengo ganas de vomitar después de las comidas.	❒	❒	❒	❒	❒	❒

PUNTUACIÓN

13.345-18 / gener 2004

Bellvitge Hospital

Unidad de Trastornos
de la Conducta Alimentaria

EDI-2

	nunca	pocas veces	a veces	a menudo	casi siempre	siempre
01. Como dulces e hidratos de carbono sin preocuparme.	❒	❒	❒	❒	❒	❒
02. Creo que mi estómago es demasiado grande.	❒	❒	❒	❒	❒	❒
03. Me gustaría volver a ser niño para sentirme seguro.	❒	❒	❒	❒	❒	❒
04. Suelo comer cuando estoy disgustado.	❒	❒	❒	❒	❒	❒
05. Suelo hartarme de comida.	❒	❒	❒	❒	❒	❒
06. Me gustaría ser más joven.	❒	❒	❒	❒	❒	❒
07. Pienso en ponerme a dieta.	❒	❒	❒	❒	❒	❒
08. Me asusto cuando mis sentimientos son muy fuertes.	❒	❒	❒	❒	❒	❒
09. Pienso que mis muslos son demasiado gruesos.	❒	❒	❒	❒	❒	❒
10. Me considero una persona poco eficaz.	❒	❒	❒	❒	❒	❒
11. Me siento muy culpable cuando como en exceso.	❒	❒	❒	❒	❒	❒
12. Creo que mi estómago tiene el tamaño adecuado.	❒	❒	❒	❒	❒	❒
13. En mi familia sólo se consideran suficientemente buenos los resultados sobresalientes.	❒	❒	❒	❒	❒	❒
14. La infancia es la época más feliz de la vida.	❒	❒	❒	❒	❒	❒
15. Soy capaz de expresar mis sentimientos.	❒	❒	❒	❒	❒	❒
16. Me aterroriza la idea de engordar.	❒	❒	❒	❒	❒	❒
17. Confío en los demás.	❒	❒	❒	❒	❒	❒
18. Me siento solo en el mundo.	❒	❒	❒	❒	❒	❒
19. Me siento satisfecho con mi figura.	❒	❒	❒	❒	❒	❒
20. Creo que generalmente controlo las cosas que me pasan en la vida.	❒	❒	❒	❒	❒	❒
21. Suelo estar confuso sobre mis emociones.	❒	❒	❒	❒	❒	❒
22. Preferiría ser adulto a ser niño.	❒	❒	❒	❒	❒	❒
23. Me resulta fácil comunicarme con los demás.	❒	❒	❒	❒	❒	❒
24. Me gustaría ser otra persona.	❒	❒	❒	❒	❒	❒
25. Exagero o doy demasiada importancia al peso.	❒	❒	❒	❒	❒	❒
26. Puedo reconocer las emociones que siento en cada momento.	❒	❒	❒	❒	❒	❒
27. Me siento incapaz.	❒	❒	❒	❒	❒	❒

13.345-21 / gener 2004

	nunca	pocas veces	a veces	a menudo	casi siempre	siempre
28. He ido a comilonas en las que sentí que no podía comer.	❒	❒	❒	❒	❒	❒
29. Cuando era pequeño, intentaba con empeño no decepcionar a mis padres y profesores.	❒	❒	❒	❒	❒	❒
30. Tengo amigos íntimos.	❒	❒	❒	❒	❒	❒
31. Me gusta la forma de mi trasero.	❒	❒	❒	❒	❒	❒
32. Estoy preocupada porque querría ser una persona más delgada.	❒	❒	❒	❒	❒	❒
33. No se qué es lo que ocurre en mi interior.	❒	❒	❒	❒	❒	❒
34. Me cuesta expresar mis emociones a los demás.	❒	❒	❒	❒	❒	❒
35. Las exigencias de la vida adulta son excesivas.	❒	❒	❒	❒	❒	❒
36. Me fastidia no ser el mejor en todo.	❒	❒	❒	❒	❒	❒
37. Me siento seguro de mi mismo.	❒	❒	❒	❒	❒	❒
38. Suelo pensar en darme un atracón.	❒	❒	❒	❒	❒	❒
39. Me alegra haber dejado de ser un niño.	❒	❒	❒	❒	❒	❒
40. No sé muy bien cuándo tengo hambre o no.	❒	❒	❒	❒	❒	❒
41. Tengo mala opinión de mi.	❒	❒	❒	❒	❒	❒
42. Creo que puedo conseguir mis objetivos.	❒	❒	❒	❒	❒	❒
43. Mis padres esperaban de mi resultados sobresalientes.	❒	❒	❒	❒	❒	❒
44. Temo no poder controlar mis sentimientos.	❒	❒	❒	❒	❒	❒
45. Creo que mis caderas son demasiado anchas.	❒	❒	❒	❒	❒	❒
46. Como con moderación delante de los demás, pero me doy un atracón cuando se van.	❒	❒	❒	❒	❒	❒
47. Me siento hinchado después de una comida normal.	❒	❒	❒	❒	❒	❒
48. Creo que las personas son más felices cuando son niños.	❒	❒	❒	❒	❒	❒
49. Si engordo un kilo, me preocupa que pueda seguir ganando peso.	❒	❒	❒	❒	❒	❒
50. Me considero una persona valiosa.	❒	❒	❒	❒	❒	❒
51. Cuando estoy disgustado no sé si estoy triste, asustado o enfadado.	❒	❒	❒	❒	❒	❒
52. Creo que debo hacer las cosas perfectamente o no hacerlas.	❒	❒	❒	❒	❒	❒
53. Pienso en vomitar para perder peso.	❒	❒	❒	❒	❒	❒
54. Necesito mantener cierta distancia con la gente; me siento incómodo si alguien se acerca demasiado.	❒	❒	❒	❒	❒	❒
55. Creo que el tamaño de mis muslos es adecuado.	❒	❒	❒	❒	❒	❒
56. Me siento emocionalmente vacío en mi interior.	❒	❒	❒	❒	❒	❒
57. Soy capaz de hablar sobre aspectos personales y sentimientos.	❒	❒	❒	❒	❒	❒
58. Los mejores años de tu vida son cuando llegas a ser adulto.	❒	❒	❒	❒	❒	❒

13.345-22 / gener 2004

	nunca	pocas veces	a veces	a menudo	casi siempre	siempre
59. Creo que mi trasero es demasiado grande.	❒	❒	❒	❒	❒	❒
60. Tengo sentimientos que no puedo identificar del todo.	❒	❒	❒	❒	❒	❒
61. Como o bebo a escondidas.	❒	❒	❒	❒	❒	❒
62. Creo que mis caderas tienen el tamaño adecuado.	❒	❒	❒	❒	❒	❒
63. Me fijo objetivos sumamente ambiciosos.	❒	❒	❒	❒	❒	❒
64. Cuando estoy disgustado, temo empezar a comer.	❒	❒	❒	❒	❒	❒
65. La gente que me gusta de verdad suele acabar defraudándome.	❒	❒	❒	❒	❒	❒
66. Me avergüenzo de mis debilidades humanas.	❒	❒	❒	❒	❒	❒
67. La gente dice que soy una persona emocionalmente inestable.	❒	❒	❒	❒	❒	❒
68. Me gustaría poder tener un control total sobre mis necesidades corporales.	❒	❒	❒	❒	❒	❒
69. Suelo sentirme a gusto en la mayor parte de las situaciones de grupo.	❒	❒	❒	❒	❒	❒
70. Digo impulsivamente cosas de las que después me arrepiento.	❒	❒	❒	❒	❒	❒
71. Me esfuerzo por buscar cosas que producen placer.	❒	❒	❒	❒	❒	❒
72. Debo tener cuidado con mi tendencia a consumir drogas.	❒	❒	❒	❒	❒	❒
73. Soy comunicativo con la mayoría de la gente.	❒	❒	❒	❒	❒	❒
74. Las relaciones con los demás hacen que me sienta atrapado.	❒	❒	❒	❒	❒	❒
75. La abnegación me hace sentir más fuerte espiritualmente.	❒	❒	❒	❒	❒	❒
76. La gente comprende mis verdaderos problemas.	❒	❒	❒	❒	❒	❒
77. Tengo pensamientos extraños que no puedo quitarme de la cabeza.	❒	❒	❒	❒	❒	❒
78. Comer por placer es signo de debilidad moral.	❒	❒	❒	❒	❒	❒
79. Soy propenso a tener ataques de rabia o de ira.	❒	❒	❒	❒	❒	❒
80. Creo que la gente confía en mi tanto como merezco.	❒	❒	❒	❒	❒	❒
81. Debo tener cuidado con mi tendencia a beber demasiado alcohol.	❒	❒	❒	❒	❒	❒
82. Creo que estar tranquilo y relajado es una pérdida de tiempo.	❒	❒	❒	❒	❒	❒
83. Los demás dicen que me irrito con facilidad.	❒	❒	❒	❒	❒	❒
84. Tengo la sensación de que todo me sale mal.	❒	❒	❒	❒	❒	❒
85. Tengo cambios de humor bruscos.	❒	❒	❒	❒	❒	❒
86. Me siento incómodo por las necesidades de mi cuerpo.	❒	❒	❒	❒	❒	❒
87. Prefiero pasar el tiempo solo que estar con los demás.	❒	❒	❒	❒	❒	❒
88. El sufrimiento te convierte en una persona mejor.	❒	❒	❒	❒	❒	❒
89. Sé que la gente me aprecia.	❒	❒	❒	❒	❒	❒
90. Siento necesidad de hacer daño a los demás.	❒	❒	❒	❒	❒	❒
91. Creo que realmente sé quién soy.	❒	❒	❒	❒	❒	❒

13.345-23 / gener 2004

DT	BD	IA
B	**ID**	**I**
MF	**P**	**IR**
A	**SI**	

Bellvitge Hospital

Unidad de Trastornos
de la Conducta Alimentaria

BITE

Instrucciones: En este cuestionario aparecen varios grupos de afirmaciones. Por favor lea con atención cada uno de ellos y rodee con un círculo la respuesta elegida.

1. ¿Tiene costumbres regulares en su alimentación diaria? **SÍ** **NO**
2. ¿Sigue habitualmente dietas de forma estricta? **SÍ** **NO**
3. ¿Considera un fracaso romper su dieta alguna vez? **SÍ** **NO**
4. ¿Cuenta las calorías de todo lo que come, incluso cuando está a régimen? **SÍ** **NO**
5. ¿Ha ayunado alguna vez durante un día completo? **SÍ** **NO**
6. Si la respuesta es SÍ, ¿Con qué frecuencia?

DÍAS ALTERNOS	5
2-3 VECES POR SEMANA	4
UN DÍA A LA SEMANA	3
ALGUNA VEZ	2
UNA VEZ	1

7. ¿Se ve su vida diaria gravemente afectada por su forma de comer? **SÍ** **NO**
8. ¿Cree Ud. que la comida “domina” su vida? **SÍ** **NO**
9. ¿Le ha ocurrido alguna vez “comer y comer” hasta que las molestias físicas le obligan a parar? **SÍ** **NO**
10. ¿Existen momentos en los cuales “sólo” puede pensar en comida? **SÍ** **NO**
11. ¿Utiliza alguno de los siguientes métodos para perder peso?

	NUNCA	RARAMENTE	UNA VEZ A LA SEMANA	2-3 VECES SEMANA	DIARIAMENTE	2-3 VECES AL DÍA	5 VECES AL DÍA
Pastillas para adelgazar	0	2	3	4	5	6	7
Diuréticos	0	2	3	4	5	6	7
Laxantes	0	2	3	4	5	6	7
Provocar el vómito	0	2	3	4	5	6	7

13.345-25 / gener 2004

12. ¿Come delante de los demás racionalmente y se excede en privado? **SÍ** **NO**
13. ¿Puede parar de comer siempre que se lo propone? **SÍ** **NO**
14. ¿Ha experimentado alguna vez deseos imperiosos de “comer, comer y comer”? **SÍ** **NO**
15. ¿Cuando se siente ansiosos tiende a comer demasiado? **SÍ** **NO**
16. ¿La idea de engordarse le aterroriza? **SÍ** **NO**
17. ¿Alguna vez ha comido grandes cantidades de alimentos rápidamente (fuera de las horas de comida)? **SÍ** **NO**
18. ¿Se siente avergonzado de sus hábitos alimentarios? **SÍ** **NO**
19. ¿Le preocupa no tener control sobre “cuánto” come? **SÍ** **NO**
20. ¿Se refugia en la comida para sentirse bien? **SÍ** **NO**
21. ¿Es Ud. capaz de dejar comida en el plato al final de una comida? **SÍ** **NO**
22. ¿Engaña a los demás acerca de la cantidad que come? **SÍ** **NO**
23. ¿Se corresponde la sensación de hambre que Ud. tiene con lo que come? **SÍ** **NO**
24. ¿Se da alguna vez “atracones” de grandes cantidades de comida? **SÍ** **NO**
25. Si es así, cuando termina de “atracarse” ¿se siente Ud. miserable? **SÍ** **NO**
26. ¿Se da Ud. “atracones” únicamente cuando está solo? **SÍ** **NO**
27. ¿Con que frecuencia ocurren estos “atracones”?

RARAMENTE	1
UNA VEZ AL MES	2
UNA VEZ A LA SEMANA	3
2-3 VECES A LA SEMANA	4
DIARIAMENTE	5
2-3 VECES AL DÍA	6

28. ¿Se desplazaría grandes distancias para satisfacer la necesidad urgente de un “atracón”? **SÍ** **NO**
29. Después de comer mucho, ¿se siente muy culpable? **SÍ** **NO**
30. ¿Come alguna vez en secreto? **SÍ** **NO**
31. ¿Cree Ud. que sus hábitos alimentarios pueden considerarse normales? **SÍ** **NO**
32. ¿Se considera a sí mismo un comedor compulsivo (no puede evitarlo)? **SÍ** **NO**
33. ¿Varía su peso más de 2kg. a la semana? **SÍ** **NO**

Total sintomatología ☐ **Total severidad** ☐

13.345-26 / gener 2004

Bellvitge Hospital

Unidad de Trastornos
de la Conducta Alimentaria

SCL-90-R

INSTRUCCIONES

Lea atentamente la lista que le presentamos en las páginas siguientes. Son problemas y molestias que casi todo el mundo sufre alguna vez. Piense si a usted le ha pasado en las últimas semanas, incluyendo el día de hoy.

Rodee con un círculo el **cero** (0) si no ha tenido esta molestia en absoluto; el **uno** (1) si la ha tenido un poco presente; el **dos** (2) si la ha tenido moderadamente; el **tres** (3) si la ha tenido bastante y el **cuatro** (4) si la ha tenido mucho o extremadamente.

13.345-27 / gener 2004

SCL-90-R

0	1	2	3	4
Nada en absoluto	Un poco	Moderadamente	Bastante	Mucho o extremadamente

1	Dolores de cabeza.	0	1	2	3	4
2	Nerviosismo o agitación interior.	0	1	2	3	4
3	Pensamientos, palabras o ideas no deseadas que no se van de su mente.	0	1	2	3	4
4	Sensaciones de desmayo o mareo.	0	1	2	3	4
5	Pérdida de deseo o placer sexual.	0	1	2	3	4
6	Ver a la gente de manera negativa, encontrar siempre faltas.	0	1	2	3	4
7	La idea de que otra persona pueda controlar sus pensamientos.	0	1	2	3	4
8	La impresión de que la mayoría de sus problemas son culpa de los demás.	0	1	2	3	4
9	La dificultad para recordar las cosas.	0	1	2	3	4
10	Preocupación acerca del desaseo, el descuido o la desorganización.	0	1	2	3	4
11	Sentirse fácilmente molesto, irritado o enfadado.	0	1	2	3	4
12	Dolores en el corazón o en el pecho.	0	1	2	3	4
13	Sentir miedo en los espacios abiertos o en la calle.	0	1	2	3	4
14	Sentirse bajo de energías o decaído.	0	1	2	3	4
15	Pensamientos suicidas, o ideas de acabar con su vida.	0	1	2	3	4
16	Oír voces que otras personas no oyen.	0	1	2	3	4
17	Temblores.	0	1	2	3	4
18	La idea de que uno no se puede fiar de la gente.	0	1	2	3	4
19	Falta de apetito.	0	1	2	3	4
20	Llorar fácilmente.	0	1	2	3	4
21	Timidez o incomodidad ante el sexo opuesto.	0	1	2	3	4
22	La sensación de estar atrapado o como encerrado.	0	1	2	3	4
23	Tener miedo de repente y sin razón.	0	1	2	3	4
24	Arrebatos de cólera o ataques de furia que no logra controlar.	0	1	2	3	4
25	Miedo a salir de casa solo.	0	1	2	3	4
26	Culparse a sí mismo de todo lo que pasa.	0	1	2	3	4
27	Dolores en la parte baja de la espalda.	0	1	2	3	4
28	Sentirse incapaz de hacer las cosas o terminar las tareas.	0	1	2	3	4
29	Sentirse solo.	0	1	2	3	4
30	Sentirse triste.	0	1	2	3	4
31	Preocuparse demasiado por todo.	0	1	2	3	4
32	No sentir interés por nada.	0	1	2	3	4
33	Sentirse temeroso.	0	1	2	3	4
34	Ser demasiaso sensible o sentirse herido con facilidad.	0	1	2	3	4
35	La impresión de que los demás se dan cuenta de lo que está pensando.	0	1	2	3	4
36	La sensación de que los demás no le comprenden o no le hacen caso.	0	1	2	3	4
37	La impresión de que otras personas son poco amistosas o de que usted no les gusta.	0	1	2	3	4

13.345-28 / gener 2004

0	1	2	3	4
Nada en absoluto	Un poco	Moderadamente	Bastante	Mucho o extremadamente

38	Tener que hacer las cosas muy despacio para estar seguro de que las hace bien.	0	1	2	3	4
39	Que su corazón palpite o vaya muy deprisa.	0	1	2	3	4
40	Náuseas o malestar en el estómago.	0	1	2	3	4
41	Sentirse inferior a los demás.	0	1	2	3	4
42	Dolores musculares.	0	1	2	3	4
43	Sensación de que las otras personas le miran o hablan de usted.	0	1	2	3	4
44	Dificultad para conciliar el sueño.	0	1	2	3	4
45	Tener que comprobar una y otra vez todo lo que hace.	0	1	2	3	4
46	Dificultad en tomar decisiones.	0	1	2	3	4
47	Sentir temor de viajar en coche, autobuses, metros o trenes.	0	1	2	3	4
48	Ahogos o dificultad para respirar.	0	1	2	3	4
49	Escalofríos, sentir calor o frío de repente.	0	1	2	3	4
50	Tener que evitar ciertas cosas, lugares o actividades porque le dan miedo.	0	1	2	3	4
51	Que se le quede la mente en blanco.	0	1	2	3	4
52	Entumecimiento u hormigueo en alguna parte del cuerpo.	0	1	2	3	4
53	Sentir un nudo en la garganta.	0	1	2	3	4
54	Sentirse desesperanzado con respecto al futuro.	0	1	2	3	4
55	Tener dificultades para concentrarse.	0	1	2	3	4
56	Sentirse débil en alguna parte del cuerpo.	0	1	2	3	4
57	Sentirse tenso o con los nervios de punta.	0	1	2	3	4
58	Pesadez en los brazos o en las piernas.	0	1	2	3	4
59	Ideas sobre la muerte o el hecho de morir.	0	1	2	3	4
60	El comer demasiado.	0	1	2	3	4
61	Sentirse incómodo cuando la gente le mira o habla acerca de usted.	0	1	2	3	4
62	Tener pensamientos que no son suyos.	0	1	2	3	4
63	Sentir el impulso de pegar, golpear o hacer daño a alguien.	0	1	2	3	4
64	Despertarse de madrugada.	0	1	2	3	4
65	Impulsos a tener que hacer las cosas de manera repetida (tocar algo, lavarse...)	0	1	2	3	4
66	Sueño inquieto o perturbado.	0	1	2	3	4
67	Tener ganas de romper o estrellar algo.	0	1	2	3	4
68	Tener ideas o creencias que los demás no comparten.	0	1	2	3	4
69	Sentirse muy cohibido o vergonzoso ante otras personas.	0	1	2	3	4
70	Sentirse incómodo entre mucha gente, por ejemplo en el cine, tiendas...	0	1	2	3	4
71	Sentir que todo requiere un gran esfuerzo	0	1	2	3	4
72	Ataques de terror o pánico.	0	1	2	3	4
73	Sentirse incómodo comiendo o bebiendo en público.	0	1	2	3	4
74	Tener discusiones frecuentes.	0	1	2	3	4
75	Sentirse nervioso cuando se queda solo.	0	1	2	3	4

13.345-29 / gener 2004

0	1	2	3	4
Nada en absoluto	Un poco	Moderadamente	Bastante	Mucho o extremadamente

76	El que otros no le reconozcan adecuadamente sus méritos.	0	1	2	3	4
77	Sentirse solo aunque esté con más gente.	0	1	2	3	4
78	Sentirse tan inquieto que no puede ni estar sentado tranquilo.	0	1	2	3	4
79	La sensación de ser inútil o no valer nada.	0	1	2	3	4
80	Presentimientos de que va a pasar algo malo.	0	1	2	3	4
81	Gritar o tirar cosas.	0	1	2	3	4
82	Tener miedo de desmayarse en público.	0	1	2	3	4
83	La impresión de que la gente intentaría aprovecharse de usted si se lo permitiera.	0	1	2	3	4
84	Tener pensamientos sobre el sexo que le inquietan bastante.	0	1	2	3	4
85	La idea de que debería ser castigado por sus pecados o sus errores.	0	1	2	3	4
86	Pensamientos o imágenes estremecedoras o que le dan miedo.	0	1	2	3	4
87	La idea de que algo serio anda mal en su cuerpo.	0	1	2	3	4
88	Sentirse siempre distante, sin sensación de intimidad con nadie.	0	1	2	3	4
89	Sentimientos de culpabilidad.	0	1	2	3	4
90	La idea de que algo anda mal en su mente	0	1	2	3	4

Somatización	**Obsesivo-compulsivo**	**Sensib. interper.**
Depresión	**Ansiedad**	**Hostilidad**
Ansiedad fóbica	**Ideación paranoide**	**Psicoticismo**

Ítems adicional.	
	GSI =
	PST =
	PSDI =

Codi i signatura del metge

13.345-30 / gener 2004

Bellvitge Hospital

Unidad de Trastornos
de la Conducta Alimentaria

SAD

Instrucciones: La presente escala mide distintos sentimientos y conductas en determinadas situaciones sociales. Lea cada pregunta con atención e indique si la misma es verdadera (SI) o falsa (NO) realizando un círculo.

1.	Me siento relajada/o incluso en situaciones sociales poco familiares.	**SÍ**	**NO**
2.	Procuro evitar las situaciones que me obligan a ser muy sociable.	**SÍ**	**NO**
3.	Me resulta fácil estar relajada/o cuando estoy con desconocidos.	**SÍ**	**NO**
4.	No tengo un deseo especial de evitar a la gente.	**SÍ**	**NO**
5.	A veces encuentro inquietantes las situaciones sociales.	**SÍ**	**NO**
6.	Normalmente me encuentro cómoda/o y tranquila/o en las situaciones sociales.	**SÍ**	**NO**
7.	Normalmente estoy tranquila/o cuando hablo con una persona del otro sexo.	**SÍ**	**NO**
8.	Procuro no hablar con los demás, a no ser que los conozca mucho.	**SÍ**	**NO**
9.	Si tengo oportunidad de conocer a gente nueva, suelo aprovecharla.	**SÍ**	**NO**
10.	A menudo me siento nerviosa/o o tensa/o en reuniones informales en donde hay personas de ambos sexos.	**SÍ**	**NO**
11.	Normalmente estoy nerviosa/o al estar con los demás, a no ser que los conozca mucho.	**SÍ**	**NO**
12.	Normalmente me siento relajada/o cuando me encuentro en un grupo de gente.	**SÍ**	**NO**
13.	Muchas veces deseo huir de la gente.	**SÍ**	**NO**
14.	Suelo sentirme incómoda/o cuando estoy con un grupo de personas a las que no conozco.	**SÍ**	**NO**
15.	Suelo estar relajada/o con alguien a quien acabo de conocer.	**SÍ**	**NO**
16.	Me pongo nerviosa/o y tensa/o cuando me presentan a alguien.	**SÍ**	**NO**
17.	Aunque una habitación esté repleta de desconocidos, yo puedo estar tranquilamente.	**SÍ**	**NO**
18.	Procuraría evitar acercarme y unirme a un gran grupo de personas.	**SÍ**	**NO**
19.	Cuando mis superiores quieren hablar conmigo, acudo de buena gana.	**SÍ**	**NO**
20.	A menudo me siento al borde del desastre cuando estoy con un grupo de gente.	**SÍ**	**NO**
21.	Tiendo a apartarme de la gente.	**SÍ**	**NO**
22.	No me importa hablar con la gente en fiestas o reuniones sociales.	**SÍ**	**NO**
23.	Rara vez estoy tranquila/o en un grupo de gente.	**SÍ**	**NO**
24.	A menudo pongo excusas para no asistir a reuniones.	**SÍ**	**NO**
25.	A veces me encargo de presentar a la gente.	**SÍ**	**NO**
26.	Procuro evitar las reuniones socialmente formales.	**SÍ**	**NO**
27.	Suelo acudir a todos los compromisos sociales que tengo.	**SÍ**	**NO**
28.	Me resulta fácil estar con los demás.	**SÍ**	**NO**

TOTAL ☐

13.345-19 / gener 2004

Bellvitge Hospital

Unidad de Trastornos
de la Conducta Alimentaria

TCI-R

(Traducción española)

En este cuestionario encontrará una serie de frases que la gente utiliza normalmente para describir sus actitudes, opiniones, intereses u otros sentimientos personales. Intente describir cómo actúa y se siente “habitualmente”, y no tan sólo cómo se siente o actúa en este momento.

Para cada una de las siguientes preguntas, por favor haga un círculo en el número que mejor describa como se siente o actúa habitualmente (sólo un número para cada pregunta):

1	2	3	4	5
Completamente falso	Casi seguro o probablemente falso	Ni cierto, ni falso, o igual de cierto que de falso	Casi seguro o probablemente verdadero	Completamente verdadero

Conteste a todos los enunciados aunque no esté completamente seguro de la respuesta. No es necesario dedicarle mucho tiempo a decidir ya que no hay respuestas correctas o incorrectas, sino que únicamente son descripciones de sus posibles opiniones personales o sentimientos.

13.345-7 / gener 2004

Traducción española a cargo de Fernández-Aranda,F., Badia,A., Bayón,C y Aitken,A., 2001

TCI-R

1	2	3	4	5
Completamente falso	Casi seguro o probablemente falso	Ni cierto, ni falso, o igual de cierto que falso	Casi seguro o probablemente verdadero	Completamente verdadero

1	A menudo hago cosas nuevas simplemente por diversión o emoción, aunque la mayoría de la gente piense que es una pérdida de tiempo.	1	2	3	4	5
2	Suelo confiar en que todo irá bien, incluso en situaciones que preocupan a la mayoría de la gente.	1	2	3	4	5
3	Siento con frecuencia que soy una víctima de las circunstancias.	1	2	3	4	5
4	Suelo aceptar a los demás tal y como son, aunque sean muy diferentes a mí.	1	2	3	4	5
5	Me gustan más los retos que los trabajos fáciles.	1	2	3	4	5
6	Con frecuencia pienso que mi vida tiene poco sentido o propósito.	1	2	3	4	5
7	Me gusta ayudar a encontrar soluciones a los problemas para que todo el mundo salga beneficiado.	1	2	3	4	5
8	Generalmente, soy muy impaciente a la hora de empezar cualquier trabajo que tenga que hacer.	1	2	3	4	5
9	A menudo me siento tenso y preocupado en situaciones poco familiares, aún cuando otros piensen que no hay motivos para preocuparse.	1	2	3	4	5
10	Con frecuencia, hago cosas en función de cómo me siento en ese momento, sin pensar en cómo se han hecho en el pasado.	1	2	3	4	5
11	Suelo hacer las cosas a mi manera sin ceder a los deseos de los demás.	1	2	3	4	5
12	A menudo siento una poderosa sensación de unión con todas las cosas que me rodean.	1	2	3	4	5
13	Haría cualquier cosa, dentro de la legalidad, para llegar a ser rico y famoso, aunque con ello perdiese la confianza de algunos buenos amigos.	1	2	3	4	5
14	Soy más reservado y me controlo más que la mayoría de la gente.	1	2	3	4	5
15	Me gusta hablar abiertamente de mis experiencias y sentimientos, con mis amigos, en vez de guardármelos para mí.	1	2	3	4	5
16	Tengo menos energía y me canso antes que la mayoría de la gente.	1	2	3	4	5
17	Casi nunca me siento libre para elegir lo que quiero hacer.	1	2	3	4	5
18	Me parece que no comprendo muy bien a la mayoría de la gente.	1	2	3	4	5
19	Con frecuencia evito conocer a extraños, porque no me siento seguro con gente que desconozco.	1	2	3	4	5
20	Me gusta agradar a la gente todo lo que puedo.	1	2	3	4	5
21	A menudo, deseo ser más inteligente que el resto de la gente.	1	2	3	4	5
22	Ningún trabajo es lo suficientemente duro como para impedir que dé lo mejor de mí.	1	2	3	4	5
23	A menudo espero que otro me solucione mis problemas.	1	2	3	4	5
24	Con frecuencia, me gasto el dinero hasta quedarme sin nada, o me endeudo por pedir demasiados créditos.	1	2	3	4	5
25	Con frecuencia, cuando estoy relajado, tengo inesperados destellos de intuición o comprensión de las cosas.	1	2	3	4	5
26	No me preocupa mucho si yo, o mi manera de hacer las cosas, les gusta a la gente.	1	2	3	4	5
27	Suelo intentar conseguir lo que quiero para mí; ya que, de cualquier forma, es imposible satisfacer a todos.	1	2	3	4	5

13.345-8 / gener 2004

1	2	3	4	5
Completamente falso	Casi seguro o probablemente falso	Ni cierto, ni falso, o igual de cierto que de falso	Casi seguro o probablemente verdadero	Completamente verdadero

28	No tengo paciencia con la gente que no acepta mis puntos de vista.	1	2	3	4	5
29	Algunas veces, me siento tan en contacto con la naturaleza que todo parece formar parte de un único ser vivo.	1	2	3	4	5
30	Cuando tengo que conocer a gente nueva, soy más tímido que la mayoría de las personas.	1	2	3	4	5
31	Soy más sentimental que la mayoría de la gente.	1	2	3	4	5
32	Pienso que la mayoría de las cosas llamadas milagros son mera casualidad.	1	2	3	4	5
33	Cuando alguien de alguna forma me hace daño suelo intentar vengarme.	1	2	3	4	5
34	Mis acciones están determinadas mayoritariamente por influencias que están fuera de mi control.	1	2	3	4	5
35	Cada día intento dar un paso más hacia mis metas.	1	2	3	4	5
36	Por favor, haz un círculo en el número cuatro, este es un ítem de validez.	1	2	3	4	5
37	Soy una persona muy ambiciosa.	1	2	3	4	5
38	Suelo estar tranquilo y seguro en situaciones que la mayoría de la gente encontraría físicamente peligrosas.	1	2	3	4	5
39	Pienso que no es inteligente ayudar a la gente débil que no puede ayudarse a sí misma.	1	2	3	4	5
40	No me siento tranquilo si trato a otra gente de forma injusta, aunque ellos hayan sido injustos conmigo.	1	2	3	4	5
41	Por lo general la gente me dice cómo se siente.	1	2	3	4	5
42	Algunas veces, he sentido que formo parte de algo que no tiene límites ni fronteras en el espacio o tiempo.	1	2	3	4	5
43	Algunas veces, siento una especie de contacto espiritual con otra gente que no puedo explicar con palabras.	1	2	3	4	5
44	Me gusta que la gente pueda hacer lo que quiera, sin reglas estrictas ni normas.	1	2	3	4	5
45	Cuando fracaso en algo, todavía me esfuerzo más en hacerlo mejor.	1	2	3	4	5
46	Generalmente, me preocupo más que la mayoría de la gente de que algo pueda ir mal en un futuro.	1	2	3	4	5
47	Suelo pensar en todos los detalles antes de tomar una decisión.	1	2	3	4	5
48	Tengo varios malos hábitos que me gustaría poder dejar.	1	2	3	4	5
49	Los demás me controlan demasiado.	1	2	3	4	5
50	Me gusta ser útil a los demás.	1	2	3	4	5
51	Por lo general, consigo que la gente me crea, incluso cuando sé que estoy exagerando o diciendo cosas que no son ciertas.	1	2	3	4	5
52	Algunas veces, he sentido que mi vida era dirigida por una fuerza espiritual superior a cualquier ser vivo.	1	2	3	4	5
53	Tengo reputación de ser una persona muy práctica, que no se deja llevar por las emociones.	1	2	3	4	5
54	Me conmueven profundamente las peticiones de caridad (por ej. cuando alguien me pide ayuda para los niños minusválidos).	1	2	3	4	5
55	Suelo poner tanto empeño en las cosas, que continuo trabajando incluso después de que otras personas se han dado por vencidas.	1	2	3	4	5
56	He tenido momentos de gran felicidad, en los cuales repentinamente he tenido una clara y profunda sensación de unidad con todo lo que existe.	1	2	3	4	5

13.345-9 / gener 2004

1	2	3	4	5
Completamente falso	Casi seguro o probablemente falso	Ni cierto, ni falso, o igual de cierto que falso	Casi seguro o probablemente verdadero	Completamente verdadero

57	Sé lo que quiero hacer en mi vida.	1	2	3	4	5
58	A menudo, no me enfrento a los problemas porque no sé lo que hay que hacer.	1	2	3	4	5
59	Prefiero gastar dinero que ahorrarlo.	1	2	3	4	5
60	A menudo, me han llamado «adicto al trabajo» debido a mi entusiasmo por trabajar mucho.	1	2	3	4	5
61	Cuando me avergüenzan o me humillan, me recupero rápidamente.	1	2	3	4	5
62	Me gusta luchar por conseguir más y mejores cosas cada vez.	1	2	3	4	5
63	Por lo general, necesito muy buenas razones para cambiar mi manera habitual de hacer las cosas.	1	2	3	4	5
64	Suelo estar relajado y despreocupado, incluso en situaciones en que casi todo el mundo tiene miedo.	1	2	3	4	5
65	Las películas y las canciones tristes me parecen bastante aburridas.	1	2	3	4	5
66	A menudo, las circunstancias me obligan a hacer cosas en contra de mi voluntad.	1	2	3	4	5
67	Generalmente, disfruto siendo mezquino con gente que lo ha sido conmigo.	1	2	3	4	5
68	A menudo, me fascina tanto lo que estoy haciendo que pierdo la noción de todo, como si me desconectara en tiempo y lugar.	1	2	3	4	5
69	Pienso que no tengo un propósito claro en mi vida.	1	2	3	4	5
70	A menudo, me siento tenso y preocupado en situaciones poco familiares, aun cuando otros piensen que no existe peligro.	1	2	3	4	5
71	Suelo guiarme por mi intuición, corazonadas o instintos, sin considerar bien todos los detalles.	1	2	3	4	5
72	Me gusta destacar en todo aquello que hago.	1	2	3	4	5
73	A menudo, siento una fuerte conexión espiritual o emocional con la gente que me rodea.	1	2	3	4	5
74	Generalmente, intento ponerme en el lugar de los otros para poder comprenderles realmente.	1	2	3	4	5
75	Principios como la honestidad y la justicia tienen poca importancia en algunos aspectos de mi vida.	1	2	3	4	5
76	Soy más trabajador que la mayoría de la gente.	1	2	3	4	5
77	Por lo general, insisto en que las cosas se hagan de una forma ordenada y meticulosa, aun cuando los demás piensen que no es importante.	1	2	3	4	5
78	Me siento seguro y confiado en la mayoría de las situaciones sociales.	1	2	3	4	5
79	A mis amigos, les resulta difícil conocer mis sentimientos porque raramente les comento lo que pienso.	1	2	3	4	5
80	Sé comunicar con facilidad mis sentimientos a los demás.	1	2	3	4	5
81	Tengo más energía y me canso menos que la mayoría de la gente.	1	2	3	4	5
82	Con frecuencia, interrumpo lo que estoy haciendo debido a preocupaciones, aunque mis amigos me digan que todo saldrá bien.	1	2	3	4	5
83	A menudo deseo ser más poderoso que los demás.	1	2	3	4	5
84	A los miembros de un equipo raramente les toca lo que les corresponde.	1	2	3	4	5
85	No cambio mi manera de actuar por complacer a los demás.	1	2	3	4	5
86	No soy nada tímido con personas desconocidas.	1	2	3	4	5

13.345-10 / gener 2004

1	2	3	4	5
Completamente falso	Casi seguro o probablemente falso	Ni cierto, ni falso, o igual de cierto que de falso	Casi seguro o probablemente verdadero	Completamente verdadero

87	Paso la mayor parte de mi tiempo haciendo cosas que parecen ser necesarias, pero que no tienen realmente importancia para mí.	1	2	3	4	5
88	No creo que, en las decisiones de negocios, deban influir principios religiosos o éticos sobre lo que está bien o mal hecho.	1	2	3	4	5
89	A menudo, intento dejar a un lado mis propios valores y opiniones, para que pueda entender mejor las experiencias de los demás.	1	2	3	4	5
90	Muchos de mis hábitos, me hacen difícil lograr metas que merezcan la pena.	1	2	3	4	5
91	He hecho verdaderos sacrificios personales para hacer de este mundo un lugar mejor donde vivir, tales como tratar de prevenir la guerra, pobreza e injusticia.	1	2	3	4	5
92	Tardo tiempo en abrirme a los demás.	1	2	3	4	5
93	Siento placer viendo a mis enemigos sufrir.	1	2	3	4	5
94	Me gusta empezar los trabajos enseguida, independietemente de que sean muy duros.	1	2	3	4	5
95	A menudo, la gente piensa que estoy en la luna porque soy poco consciente de lo que ocurre a mi alrededor.	1	2	3	4	5
96	Normalmente, me gusta ser frío y distante con los demás.	1	2	3	4	5
97	Lloro con más facilidad que la mayoría de la gente cuando veo una película triste.	1	2	3	4	5
98	Me recupero con más rapidez que la mayoría de la gente de enfermedades leves y/o situaciones de estrés.	1	2	3	4	5
99	Con frecuencia, pienso que soy parte de una fuerza espiritual de la que depende toda la vida.	1	2	3	4	5
100	Antes de ser capaz de confiar en mí mismo ante situaciones difíciles, necesito más práctica para desarrollar hábitos adecuados.	1	2	3	4	5
101	Por favor, redondea el número uno, es un ítem de validez.	1	2	3	4	5
102	Me gusta tomar decisiones rápidas, para ponerme cuanto antes a realizar lo que haya que hacer.	1	2	3	4	5
103	Normalmente, me siento confiado haciendo cosas que los demás considerarían peligrosas (como conducir un coche a mucha velocidad por una carretera mojada o helada).	1	2	3	4	5
104	Me gusta explorar nuevas maneras de hacer las cosas.	1	2	3	4	5
105	Disfruto más ahorrando que gastándome el dinero en ocio o diversión.	1	2	3	4	5
106	He tenido experiencias personales en las que me sentí como si estuviera en contacto con un poder divino y espiritual.	1	2	3	4	5
107	Tengo tantos defectos que hacen que no me guste mucho.	1	2	3	4	5
108	La mayoría de la gente parece tener más recursos que yo.	1	2	3	4	5
109	Cuando creo que no me van a pillar, suelo desobedecer reglas y leyes.	1	2	3	4	5
110	Incluso con amigos, prefiero no abrirme mucho.	1	2	3	4	5
111	Cuanto más duro sea un trabajo más me gusta.	1	2	3	4	5
112	A menudo, al mirar cosas cotidianas, me sucede algo maravilloso: tengo la sensación de que las estoy viendo por primera vez.	1	2	3	4	5
113	Me suelo sentir tenso y preocupado cuando tengo que hacer algo nuevo que me es poco familiar.	1	2	3	4	5
114	Estoy impaciente por empezar cualquier tarea que me asignen.	1	2	3	4	5

13.345-11 / gener 2004

1	2	3	4	5
Completamente falso	Casi seguro o probablemente falso	Ni cierto, ni falso, o igual de cierto que de falso	Casi seguro o probablemente verdadero	Completamente verdadero

115	Tengo poca fuerza de voluntad para resistir tentaciones fuertes, aunque sepa que voy a sufrir las consecuencias.	1	2	3	4	5
116	Si me siento molesto o alterado, suelo sentirme mejor con amigos que estando solo.	1	2	3	4	5
117	Suelo llevar a cabo más cosas de las que la gente espera de mí.	1	2	3	4	5
118	Experiencias religiosas me han ayudado a entender el verdadero propósito de mi vida.	1	2	3	4	5
119	Generalmente, me esfuerzo más que el resto de la gente, porque quiero hacer las cosas lo mejor que puedo.	1	2	3	4	5
120	Por favor, redondea el número cinco, es un ítem de validez.	1	2	3	4	5
121	Me suelo sentir con más energía y confianza que la mayoría de la gente, incluso después de situaciones de estrés y/o enfermedades leves.	1	2	3	4	5
122	Cuando no sucede nada nuevo, suelo buscar algo que me resulte excitante o novedoso.	1	2	3	4	5
123	Me gusta pensar las cosas durante mucho tiempo antes de tomar una decisión.	1	2	3	4	5
124	La gente que se relaciona conmigo tiene que aprender a hacer las cosas a mi manera.	1	2	3	4	5
125	Suelo establecer contactos afectuosos con la mayoría de la gente.	1	2	3	4	5
126	Suelen describirme como una persona ambiciosa.	1	2	3	4	5
127	Prefiero leer un libro que hablar acerca de mis sentimientos con otra persona.	1	2	3	4	5
128	Disfruto vengándome de la gente que me ha hecho daño.	1	2	3	4	5
129	Si algo no sale como tengo previsto, tiendo más a abandonarlo que a seguir intentándolo durante mucho tiempo.	1	2	3	4	5
130	Es fácil para la gente acercarse a mí emocionalmente.	1	2	3	4	5
131	Probablemente, me encontraría relajado y a gusto quedando con gente desconocida, aunque me hubieran dicho que es gente poco amigable.	1	2	3	4	5
132	Por favor, redondea el número dos, es un ítem de validez.	1	2	3	4	5
133	En general, no me gusta la gente que tiene ideas distintas a las mías.	1	2	3	4	5
134	Con frecuencia, me cuesta iniciar cualquier proyecto.	1	2	3	4	5
135	Por lo general, soy hábil deformando o exagerando la realidad a la hora de contar una historia divertida o gastar una broma a alguien.	1	2	3	4	5
136	Me es muy difícil adaptarme a cambios en mi forma habitual de hacer las cosas, porque me pongo nervioso, me canso o me preocupo.	1	2	3	4	5
137	Soy más perfeccionista que la mayoría de la gente.	1	2	3	4	5
138	Con frecuencia, la gente piensa que soy demasiado independiente porque no hago lo que ellos quieren.	1	2	3	4	5
139	Se me da mejor ahorrar que a la mayoría de la gente.	1	2	3	4	5
140	A menudo, dejo una actividad si requiere más tiempo del que yo pensaba.	1	2	3	4	5
141	El que algo esté bien o mal es tan sólo una cuestión de opinión.	1	2	3	4	5
142	A menudo, aprendo mucho de otra gente.	1	2	3	4	5
143	Creo que la vida depende de un orden o poder espiritual que no puede ser explicado del todo.	1	2	3	4	5
144	Si no soy muy cuidadoso, a menudo las cosas me suelen ir mal.	1	2	3	4	5

13.345-12 / gener 2004

1	2	3	4	5
Completamente falso	Casi seguro o probablemente falso	Ni cierto, ni falso, o igual de cierto que de falso	Casi seguro o probablemente verdadero	Completamente verdadero

145	Soy más lento que la mayoría de la gente a la hora de entusiasmarme por ideas y actividades nuevas.	1	2	3	4	5
146	Probablemente, podría conseguir más cosas de las que logro, pero no veo la necesidad de exigirme más allá de lo estrictamente necesario.	1	2	3	4	5
147	Suelo permanecer alejado de situaciones sociales en las que tengo que conocer a gente nueva, incluso si se me asegura que serán amistosos.	1	2	3	4	5
148	A menudo, me siento tan en conexión con la gente que tengo a mi alrededor, que es como si no hubiera separación entre nosotros.	1	2	3	4	5
149	En la mayoría de las situaciones, mi forma natural de responder se basa en las buenas costumbres que he desarrollado.	1	2	3	4	5
150	Con frecuencia, tengo que dejar lo que estoy haciendo porque comienza a preocuparme que algo salga mal.	1	2	3	4	5
151	Con frecuencia, me dicen que soy distraído porque me meto tanto en lo que estoy haciendo que pierdo la noción de todo.	1	2	3	4	5
152	Generalmente, tengo en cuenta los sentimientos de otras personas tanto como los míos.	1	2	3	4	5
153	Con frecuencia, soy descrito como muy poco ambicioso.	1	2	3	4	5
154	La mayor parte del tiempo, prefiero hacer cosas algo arriesgadas (como conducir en una zona montañosa con curvas escarpadas) que estar quieto o inactivo durante horas.	1	2	3	4	5
155	Alguna gente, piensa que soy demasiado tacaño o mirado con el dinero.	1	2	3	4	5
156	Prefiero las viejas formas de hacer las cosas, «ensayadas y correctas», que intentar formas «nuevas y mejores».	1	2	3	4	5
157	Con frecuencia, hago cosas para ayudar a evitar la extinción de animales y plantas.	1	2	3	4	5
158	A menudo, me esfuerzo hasta el agotamiento y/o intento hacer más de lo que realmente puedo.	1	2	3	4	5
159	Cuando me pillan haciendo algo mal, no soy muy bueno para salir del atolladero.	1	2	3	4	5
160	La práctica continuada de las cosas me ha permitido adquirir buenos hábitos, que son más fuertes que la mayoría de los impulsos que me aparecen temporalmente.	1	2	3	4	5
161	Pienso que tendré suerte en el futuro.	1	2	3	4	5
162	Me abro fácilmente con las demás personas, aún cuando no las conozca demasiado.	1	2	3	4	5
163	Cuando fracaso en conseguir alguna cosa al principio, el poder conseguirla se convierte en mi reto personal.	1	2	3	4	5
164	No es necesario ser deshonesto para tener éxito en los negocios.	1	2	3	4	5
165	En las conversaciones, suelo ser mejor escuchando que hablando.	1	2	3	4	5
166	No sería feliz en un trabajo donde no pudiese comunicarme con otras personas.	1	2	3	4	5
167	Mis actitudes están determinadas mayoritariamente por influencias que están fuera de mi control.	1	2	3	4	5
168	A menudo, desearía ser el más fuerte.	1	2	3	4	5
169	Suelo necesitar siestas o periodos de descanso extra, porque me canso con facilidad.	1	2	3	4	5
170	Me cuesta mucho mentir, aunque lo tenga que hacer para no herir los sentimientos de otros.	1	2	3	4	5
171	Siempre pienso que las cosas saldrán bien, sea cual sea el problema a superar.	1	2	3	4	5

13.345-13 / gener 2004

1	2	3	4	5
Completamente falso	Casi seguro o probablemente falso	Ni cierto, ni falso, o igual de cierto que de falso	Casi seguro o probablemente verdadero	Completamente verdadero

172	Me cuesta disfrutar gastándome el dinero en mí mismo, aunque tenga mucho ahorrado.	1	2	3	4	5
173	A menudo, hago mi mejor trabajo bajo circunstancias difíciles.	1	2	3	4	5
174	Me gusta guardarme los problemas para mí.	1	2	3	4	5
175	Tengo una imaginación muy viva y desarrollada.	1	2	3	4	5
176	Me gusta más estar en casa que viajar o explorar nuevos lugares.	1	2	3	4	5
177	Las relaciones de amistad intensas con las demás personas son muy importantes para mí.	1	2	3	4	5
178	A menudo, tengo el deseo de seguir siendo siempre joven.	1	2	3	4	5
179	Me gusta leer antes todo lo que tengo que firmar.	1	2	3	4	5
180	Pienso que me sentiría confiado y relajado con desconocidos, aunque me dijeran que están enfadados conmigo.	1	2	3	4	5
181	Siento que es más importante ser afectivo y comprensivo con la gente que ser práctico e inflexible.	1	2	3	4	5
182	Con frecuencia, desearía tener poderes especiales como Supermán.	1	2	3	4	5
183	Me gusta compartir con los demás lo que he aprendido.	1	2	3	4	5
184	Suelo considerar las situaciones difíciles como desafíos u oportunidades.	1	2	3	4	5
185	La mayoría de la gente que conozco sólo piensan en ellos mismos, sin importarles quien salga perjudicado.	1	2	3	4	5
186	Para recuperarme de enfermedades leves o situaciones de estrés, necesito mucho apoyo, descanso y tranquilidad.	1	2	3	4	5
187	Sé que existen principios en la vida que nadie puede violar, sin sufrir consecuencias a largo plazo.	1	2	3	4	5
188	No quiero ser más rico que los demás.	1	2	3	4	5
189	Cuando empiezo un trabajo, me gusta ir lentamente, aunque sea fácil de hacer.	1	2	3	4	5
190	Arriesgaría mi vida para hacer del mundo un lugar mejor.	1	2	3	4	5
191	Cuando la gente pasa mi trabajo por alto, me obstino aún más en lograr el éxito.	1	2	3	4	5
192	Con frecuencia, desearía detener el paso del tiempo.	1	2	3	4	5
193	Odio tomar decisiones solamente basadas en mi primera impresión.	1	2	3	4	5
194	Prefiero estar sola/o que tener que cargar con los problemas de otras personas.	1	2	3	4	5
195	No quiero ser más admirado que el resto de la gente.	1	2	3	4	5
196	Necesito mucha ayuda de los demás para que me enseñen a tener buenas costumbres.	1	2	3	4	5
197	Me gusta hacer los trabajos rápidamente y después ofrecerme para hacer más.	1	2	3	4	5
198	Me cuesta tolerar gente que sea diferente a mí.	1	2	3	4	5
199	Cuando alguien me hace daño, prefiero ser amable que intentar vengarme.	1	2	3	4	5
200	Realmente, me gusta estar ocupada/o.	1	2	3	4	5
201	Intento cooperar lo máximo posible con los demás.	1	2	3	4	5
202	Gracias a mi ambición y a mi trabajo duro, suelo tener éxito.	1	2	3	4	5
203	Por lo general, es fácil que me caiga bien la gente que tiene valores distintos a los míos.	1	2	3	4	5

13.345-14 / gener 2004

1	2	3	4	5
Completamente falso	Casi seguro o probablemente falso	Ni cierto, ni falso, o igual de cierto que de falso	Casi seguro o probablemente verdadero	Completamente verdadero

204	Las buenas costumbres se han convertido en parte de mí, y me salen de forma natural y espontánea casi todo el tiempo.	1	2	3	4	5
205	Odio cambiar mi manera de hacer las cosas, aunque me digan que hay formas nuevas y mejores de hacerlas.	1	2	3	4	5
206	Pienso que no es sabio creer en cosas que no pueden ser explicadas científicamente.	1	2	3	4	5
207	Estoy dispuesto a sacrificarme mucho para tener éxito.	1	2	3	4	5
208	Me gusta imaginarme a mis enemigos sufriendo.	1	2	3	4	5
209	Por favor, redondea el número tres, es un ítem de validez.	1	2	3	4	5
210	Me gusta prestar atención a los detalles, en todo aquello que hago.	1	2	3	4	5
211	Por lo general, me siento libre para elegir lo que quiero hacer.	1	2	3	4	5
212	A menudo, me involucro tanto en lo que estoy haciendo, que llego a olvidar dónde estoy durante un instante.	1	2	3	4	5
213	Me gusta que los demás sepan que me preocupo por ellos.	1	2	3	4	5
214	La mayor parte del tiempo, preferiría hacer algo arriesgado (como lanzarme en paracaídas o ala delta), antes que tener que quedarme quieto e inactivo durante unas horas.	1	2	3	4	5
215	Debido a que suelo gastar de forma impulsiva mucho dinero, me cuesta ahorrar, incluso para cosas especiales como unas vacaciones.	1	2	3	4	5
216	A menudo, cedo a los deseos de mis amigos.	1	2	3	4	5
217	Nunca me preocupo de las cosas terribles que puedan ocurrir en un futuro.	1	2	3	4	5
218	A la gente, le resulta fácil acudir a mí en busca de ayuda, simpatía y comprensión.	1	2	3	4	5
219	La mayoría de las veces, perdono con rapidez a quien me ha hecho daño.	1	2	3	4	5
220	Pienso que mi forma espontánea de actuar es consistente con mis metas y mis principios a largo plazo.	1	2	3	4	5
221	Al hacer cosas, prefiero esperar a que sea otro quien tome el mando.	1	2	3	4	5
222	Me divierte comprarme cosas.	1	2	3	4	5
223	He tenido experiencias que me han aclarado tanto mi papel en la vida, que me han hecho sentir muy feliz y emocionada/o.	1	2	3	4	5
224	Suelo respetar las opiniones de las/los demás.	1	2	3	4	5
225	Mi conducta se encuentra fuertemente guiada por determinadas metas que he establecido en mi vida.	1	2	3	4	5
226	Suele ser tonto favorecer el éxito de otra gente.	1	2	3	4	5
227	A menudo, desearía poder vivir siempre.	1	2	3	4	5
228	Cuando alguien me señala mis fallos, suelo trabajar más duro para corregirlos.	1	2	3	4	5
229	No dejaría de hacer lo que estoy haciendo, sólo por haber tenido varios fracasos seguidos.	1	2	3	4	5
230	Generalmente, tengo buena suerte en todo lo que intento.	1	2	3	4	5
231	Desearía ser más guapa/o que las/los demás.	1	2	3	4	5
232	Probablemente, las experiencias místicas son sólo deseos.	1	2	3	4	5
233	Los derechos individuales son más importantes que las necesidades de cualquier grupo.	1	2	3	4	5
234	La falta de honestidad causa problemas, sólo si te descubren.	1	2	3	4	5
235	Los buenos hábitos me facilitan hacer las cosas en la forma en que quiero.	1	2	3	4	5

13.345-15 / gener 2004

1	2	3	4	5
Completamente falso	Casi seguro o probablemente falso	Ni cierto, ni falso, o igual de cierto que de falso	Casi seguro o probablemente verdadero	Completamente verdadero

236	Los demás y las circunstancias suelen ser los responsables de mis problemas.	1	2	3	4	5
237	Suelo poder rendir «a tope», todo el día, sin tener que esforzarme.	1	2	3	4	5
238	Quiero ser la/el mejor en todo lo que hago.	1	2	3	4	5
239	Aunque los demás me pidan que tome una decisión rápida, casi siempre pienso en todos los hechos detenidamente antes de tomarla.	1	2	3	4	5
240	Cuando hay algo que debe hacerse, suelo prestarme rápidamente como voluntario.	1	2	3	4	5

NS1		HA1		RD1		PS1		SD1		C1		ST1	
NS2		HA2		RD2		PS2		SD2		C2		ST2	
NS3		HA3		RD3		PS3		SD3		C3		ST3	
NS4		HA4		RD4		PS4		SD4		C4		STTOT	
NSTOT		HATOT		RDTOT		PSTOT		SD5		C5			
								SDTOT		CTOT			

VALIDITY

(SCORE OUT OF 5

13.345-16 / gener 2004

CUESTIONARIO TRANSCULTURAL (CCQ)

Sección 1: Información demográfica

Nombre: _____ **Código de identificación** _____

Fecha de nacimiento: _____ **Fecha** _____

Edad: _____ años **Sexo:** ☐ Hombre ☐ Mujer

¿Tienes alguna hermana? ☐ Sí: Edad_____ ☐ No

Lugar de residencia actual: _____ **Lugar de nacimiento:** _____

Lugar de nacimiento de los padres: _____
Lugar de nacimiento de los abuelos: _____

a) ¿Cuál sería la mejor descripción del lugar donde te criaste? (señalar una*):*
o Zona Rural o Pueblo o Ciudad mediana o Ciudad grande

b) Nivel de educación alcanzado *(señalar uno)*:
oEstudios primarios
oEscuela secundaria
oEstudios universitarios
oFormación profesional

c) Estado laboral *(señalar uno)*:
o Nunca ha trabajado
o Había trabajado, actualmente no
o Trabaja a media jornada
o Trabaja a jornada completa

d) ¿Eres estudiante? Sí o No o

e) ¿Estás recibiendo ayudas del estado?
Sí o No o

f) Edad de tu padre: _____

g) Edad de tu madre: _____

h) Nivel de educación alcanzado por tu padre:
O Estudios primarios
O Escuela secundaria
O Estudios Universitarios
O Formación profesional

i) Nivel de educación alcanzado por tu madre:
o Estudios primarios
o Escuela secundaria
o Estudios Universitarios
o Formación profesional

Estado laboral de los padres: ¿Cuál era la situación laboral de tu madre y de tu padre cuando tú eras una niño (antes de los 12 años) (señalar una)? Si trabajaban, por favor indicar el tipo de trabajo.

j) Padre
o No trabajaba
o Trabajaba a tiempo parcial
o Trabajaba a jornada completa

k) Madre
o No trabajaba
o Trabajaba a tiempo parcial
o Trabajaba a jornada completa

l) Tu religión (*señalar una)*:
- o Protestante
- o Católica
- o Otra religión cristiana
- o Judía
- o Musulmana
- o Hindú
- o Budista
- o Otra
- o Ninguna

m) Religión de tu padre:
- o Protestante
- o Católica
- o Otra religión cristiana
- o Judía
- o Musulmana
- o Hindú
- o Budista
- o Otra
- o Ninguna

n) Religión de tu madre:
- o Protestante
- o Católica
- o Otra religión cristiana
- o Judía
- o Musulmana
- o Hindú
- o Budista
- o Otra
- o Ninguna

Sección 2: Problemas relacionados con la comida y con el peso

(1) ¿Te han diagnosticado alguna vez un trastorno de la alimentación?
Sí o No o

(2) ¿Antes de que tuvieses 12 años conociste a alguien que tuviese un trastorno de la alimentación (como anorexia nerviosa o bulimia) -*señala la casilla correspondiente*-?

	No	Sí			
	(0)	Un miembro de la familia en casa (1)	Un miembro de la familia pero no en casa (2)	Un amigo (3)	Otros (4)
a) bajo peso/anorexia					
b) sobrepeso/sobreingesta/bulimia					

(3) ¿Alguno de los siguientes aspectos han influido en que cambiases tus hábitos alimentarios? En la tabla que hay a continuación, por favor señala en qué grado los siguientes aspectos te han influido:

		Nada (1)	Un poco (2)	Moderadamente (3)	Mucho (4)	Extremadamente (5)
a	Tu apariencia física					
b	Sentirte mal con tu figura					
c	Preocupaciones de la familia acerca de tu peso					
d	Relaciones familiares					
e	Relaciones con los amigos					
f	Hacer dieta con el resto de la familia					
g	Burlas por parte de la familia sobre tus hábitos alimentarios					
h	Burlas por parte de los amigos sobre tus hábitos alimentarios					
i	Burlas por parte de la familia sobre tu peso/figura					

j	Burlas por parte de los amigos sobre tu peso/figura					
k	Hacer dietas con amigos					
l	Mass media (e.g. TV; anuncios; revistas)					
m	Estilos actuales de moda					

(4) Por favor, a continuación indica con qué frecuencia semanal haces ejercicio físico actualmente (incluyendo pasear, ir en bici, ejercicios de mantenimiento, etc.):

Número de días a la semana que haces ejercicio:	
Minutos al día (promedio):	

Sección 3: Hábitos alimentarios familiares y personales _____

(5) Durante tu infancia (antes de que tuvieses 12 años), ¿cuántos miembros de tu familia estaban viviendo contigo y qué edad tenías mientras vivieron contigo *(señala las casillas apropiadas)*?

		Vivían en casa		Número
		Sí (1)	No (0)	
A	Padre			
B	Madre			
C	Hermano(s)			
D	Madrastra/Padrastro			
E	Hermanastro/a(s)			
F	Tía/Tío			
G	Abuelos			
H	Otros			

(6) ¿Durante tu infancia, cuántos miembros de tu familia estaban presentes en la mayoría de las comidas?_____

(7) ¿Durante tu infancia (antes de que tuvieses 12 años), con qué frecuencia comías en familia (al menos con uno de los padres) (señala la casilla apropiada)?.¿Y después de los 12 años, mientras vivías en casa?

		3 veces al día (0)	1-2 veces al día (1)	2-7 veces a la semana (2)	Una vez a la semana o menos (3)
A	Antes de los 12 años				
B	Después de los 12 años, mientras vivía en casa				

(8) ¿Antes de que tuvieses 12 años, solías tener un horario regular de comidas?

Sío No o

(9) ¿Antes de que tuvieses 12 años, solías hacer la primera ingesta del día antes de ir al colegio?
Sí o No o

(10)¿Antes de que tuvieses 12 años, con qué frecuencia ibas a comer a restaurantes de "fast-food", tipo Mc Donalds, etc. (señalar una respuesta)?,

Nunca	
Una vez al mes o menos	
1-4 veces al año	
Al menos una vez a la semana	

(11)¿Durante tu infancia, a alguien de tu familia se le tenía que preparar habitualmente la comida de un modo especial (debido a una enfermedad médica, o por preferencias de sabores)?

		Sí (1)	No (0)
a	Abuelo		
b	Madre		
c	Padre		
d	Hermano		
e	Tu		
f	Otro miembro de la casa/canguro		

(12) ¿Durante tu infancia, qué valor le daban a la comida y a los aspectos relacionados con ésta, tu padre y tu madre?

		Valor parecido o inferior que la mayoría de las personas (0)	Más valor que la mayoría de las personas (1)	Mucho más valor que la mayoría de las personas (2)
a	Madre			
b	Padre			

(13) ¿Durante tu infancia, alguien de tu familia estaba muy interesado en llevar a cabo una alimentación saludable hasta el punto de que ello interfería en el tipo de alimentación que se hacía en tu familia?

		Sí (1)	No (0)
a	Abuelo		
b	Madre		
c	Padre		
d	Hermano		
e	Tu		
f	Otro miembro de la casa/canguro		

(14) ¿Durante tu infancia, con qué frecuencia se hacían comidas para celebrar los eventos sociales con tu familia o con los amigos de tus padres *(señalar una casilla)*?

		Una vez a la semana o más (0)	1-4 veces al mes (1)	5-8 veces al año (2)	2-4 veces al año (3)	Menos de un par de veces al año (4)
a	Frecuencia de comidas que hacían para celebrar eventos "sociales"					
b	Frecuencia con que asistían a comidas de tipo "social"					

(15) ¿Durante tu infancia, y comparado con las personas de tu edad, tenían tus padres unas reglas muy estrictas sobre lo que debías comer? Sí o No o

(16) Si es así: ¿Con qué frecuencia seguías tú estas reglas?

Nunca	
Ocasionalmente	
Frecuentemente	
Siempre	

(17) ¿Durante tu infancia, con qué frecuencia solías comer "snacks" dulces o salados (ej: chocolatinas, chucherías, patatas fritas y derivados, etc.)?

Nunca	
Menos de una vez a la semana	
2-6 veces a la semana	
Cada día (menos de 3 veces)	
Cada día (3 veces o más)	

(18) ¿En comparación con tus amigos, tenías restringida la accesibilidad a este tipo de "snacks"?
Sí o No o

(19) ¿Con qué frecuencia empleaba tu familia la comida como un método de recompensa (ej. por buen comportamiento) y con qué frecuencia te impedían tomar algún tipo de comida como método de castigo?

		Nunca (0)	Ocasionalmente (1)	Frecuentemente (2)
a	Comida como método de recompensa			
b	Restricción de algún alimento como método de castigo			

(20) ¿Durante tu infancia, hubo restricción de algún tipo de alimentos en tu familia? *(si es así, por favor indica qué tipo de alimento se trataba)*?

	Sí (1)	No (0)
a) Restricción de alimentos básicos		
b) Restricción de alimentos de lujo		

Sección 4: Estilo familiar, expectativas e independencia

(21) Por favor, a continuación indica cuáles de las siguientes actividades solías hacer antes de los 12 años. Para cada una de las actividades que realizabas, intenta recordar cuantas horas más o menos empleabas en cada actividad durante un día normal y los fines de semana.

		¿Realizabas alguna actividad?		**Días entre semana**			**Fines de semana**		
		Sí	No	No. de horas			No. de horas		
				< 2hrs	2-4hrs	>4hrs	< 2hrs	2-4hrs	>4hrs
		(0)	(1)	(0)	(1)	(2)	(0)	(1)	(2)
a	Tareas escolares en el colegio								
b	Tareas escolares en casa								
c	Mirar TV/videos								
d	Jugar a juegos de ordenador								
e	Leer libros/revistas								
f	Jugar con amigos o hermanos								
g	Hacer deporte, nadar, etc.								

(22) Por favor, a continuación indica cuántos días sueles emplear actualmente y cuánto horas al día en las siguientes actividades:

		¿Realizabas alguna actividad?		**Días entre semana**			**Fines de semana**		
		Sí	No	No. de horas			No. de horas		
				< 2hrs	2-4hrs	>4hrs	< 2hrs	2-4hrs	>4hrs
		(0)	(1)	(0)	(1)	(2)	(0)	(1)	(2)
a	Trabajo/estudios en el lugar de trabajo								
b	Trabajo/estudios en casa								
c	Mirar TV/videos								
d	Internet								
e	Leer libros/revistas								
f	Actividades de relación social								
g	Hacer deporte, nadar etc.								

(23) ¿Cuántos años tenías cuando..?:

(*Si no has hecho nada de lo que se indica a continuación, por favor dejar en blanco)*

		Edad (años)
a	La primera vez que te fuiste de vacaciones sin tus padres (ej. con el colegio o con los padres de un amigo tuyo)	
b	La primera vez que fuiste de vacaciones con amigos sin ningún responsable	
c	La primera vez que fuiste a un país extranjero (sin tus padres) durante un periodo largo de tiempo (>2 semanas)	
d	Te permitieron ir a fiestas de chicos y chicas donde podían tomarse bebidas alcohólicas	

e	Empezaste a prepararte tu comida	
f	Empezaste a administrarte tu propio dinero (ej. dinero de bolsillo)	
g	Empezaste a trabajar a media jornada (si es aplicable)	
h	Empezaste a ser económicamente independiente de tus padres (o empezaste a ganar tu propio dinero)?	
i	Te fuiste de casa, o a la edad que piensas irte	
j	Tuviste el periodo por primera vez	

(24) Por favor, completa las preguntas que se plantean a continuación siguiendo los pasos 1,2,3.

Paso1: *Por favor, en la primera columna indica qué importancia tiene para ti cada uno de los siguientes factores, para sentirte satisfecho en la vida*
Paso2: *En la segunda columna, indica qué importancia tienen estos factores para tus amigos*
Paso3: *En la tercera columna, indica qué importancia crees que le darían tu madre y/o tu padre a cada uno de estos factores, si se les preguntase cuáles creen ellos que son importantes para ti para alcanzar el éxito en la vida.*

Por favor, puntuar cada ítem del 1-5, donde:

1 = Ninguna importancia
2 = Ligeramente importante
3 = Bastante importante
4 = Muy importante
5 = Extremadamente importante

	Tú (Paso 1)	**Amigos** (Paso 2)	**Madre** (Paso 3)	**Padre** (Paso4)
(a) Atractivo físico	☐	☐	☐	☐
(b) Delgadez	☐	☐	☐	☐
(c) Inteligencia	☐	☐	☐	☐
(d) Éxito profesional	☐	☐	☐	☐
(e) Ser marido/mujer	☐	☐	☐	☐
(f) Ser madre/padre	☐	☐	☐	☐
(g) Ser una buena ama de casa	☐	☐	☐	☐
(h) Atender las necesidades de los demás	☐	☐	☐	☐
(i) Popularidad	☐	☐	☐	☐
(j) Independencia	☐	☐	☐	☐

(k) Estar en forma física	☐	☐	☐	☐
(l) Educación	☐	☐	☐	☐
(m) Conformista/obedecer reglas	☐	☐	☐	☐
(n) Ser autodisciplinado	☐	☐	☐	☐
(o) Ser dueño de tus propias acciones	☐	☐	☐	☐

(25) Por favor completa las preguntas que se plantean a continuación de un modo similar a las de la pregunta 24 pero siguiendo los pasos 1,2.

***Paso 1*:** En la primera columna, indica qué éxito has tenido en alcanzar tú cada una de estas metas. Puntúa cada ítem en una escala del 1-5, donde significaría: *1) Nada de éxito; 2) Un poco de éxito; 3) Éxito moderado; 4) Mucho éxito; 5) Éxito extremo*

***Paso 2*:** En la segunda columna, indica qué nivel de conflicto se generó entre tú y tus padres/cuidadores en función del valor atribuido a cada uno de estos factores. Puntuar cada ítem en una escala del 1-5, donde: *1) Nada de conflicto; 2) Un poco de conflicto; 3) Conflicto moderado; 4) Mucho conflicto; 5) Conflicto extremo*

	Éxito (Paso 1)	**Nivel de conflicto** (Paso 2)
(a) Atractivo físico	☐	☐
(b) Delgadez	☐	☐
(c) Inteligencia	☐	☐
(d) Éxito profesional	☐	☐
(e) Ser marido/mujer	☐	☐
(f) Ser padre/madre	☐	☐
(g) Ser una buena ama de casa	☐	☐
(h) Atender las necesidades de los demás	☐	☐
(i) Popularidad	☐	☐
(j) Independencia	☐	☐
(k) Buena forma física	☐	☐

(l) Educación ☐ ☐

(m) Conformismo/obedecer reglas ☐ ☐

(n) Auto-disciplina ☐ ☐

(o) Ser dueño de tus propias acciones ☐ ☐

26) ¿Qué sentimientos positivos tienes acerca de tu persona?

Ningún sentimiento positivo	
No muchos sentimientos positivos	
Bastante positivos	
Positivos	
Muy positivos	

(27)¿Durante tu infancia (hasta los 12 años), con qué frecuencia se daban las siguientes afirmaciones en relación al comportamiento que tu madre/figura materna tenían hacia ti?

		Nunca (0)	Ocasionalmente (1)	A menudo (2)	La mayor parte del tiempo (3)	Siempre (4)
a	Afectuosa conmigo					
b	Interesada en mi					
c	Sobreprotectora conmigo					
d	Dependiente de mi					
e	Critica conmigo					
f	Abusos psicológicos hacia mi					
g	Abusos físicos o violencia física hacia mi					

(28)¿Durante tu infancia (hasta los 12 años), con qué frecuencia se daban las siguientes afirmaciones en relación al comportamiento que tu padre/figura paterna tenían hacia ti?

		Nunca (0)	Ocasionalmente (1)	A menudo (2)	La mayor parte del tiempo (3)	Siempre (4)
a	Afectuoso conmigo					
b	Interesado por mi					
c	Sobreprotector conmigo					
d	Dependiente de mi					
e	Crítico conmigo					
f	Abusos psicológicos hacia mi					
g	Abusos físicos o violencia física hacia mi					

(29) ¿Hay alguna otra persona adulta, independientemente de tus padres, con la cual hayas tenido alguna relación conflictiva o hayas sufrido abusos, antes de los 12 años?

Sí o No o

(30) (a) ¿En alguna ocasión, has tenido una experiencia sexual no deseada, (incluido durante tu infancia)?

Sí o No o

Si la respuesta es negativa, pasar a la pregunta 31

(b) ¿Conocías a la persona implicada en los abusos sexuales?

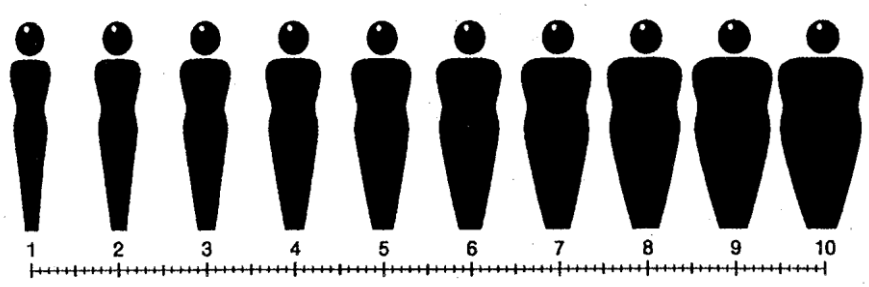
Sí o No o

(c) ¿Era alguien de tu familia?

Sí o No o

Sección 5: Ideales sociales sobre la delgadez

Por favor contestar a las siguientes preguntas utilizando la siguiente escala (1-10):



(31) Mirando las figuras que se presentan, ¿Cuál crees que se asemeja a tu actual figura corporal?

(32) De las figuras que se presentan, ¿Cuál crees que se asemeja a la figura corporal de tu madre?

(33) De las figuras que se presentan, ¿Cuál crees que se asemeja a la figura corporal de tu padre?

(34)¿Cuál sería tu figura corporal ideal?

(35) ¿Qué figura corporal crees que gusta más a los miembros del sexo opuesto en tu cultura?

(36)¿Cuál crees que sería la figura corporal que se asemejaría a una persona obesa?

(37)¿Cuál crees que sería la figura corporal que se asemejaría a una persona muy delgada?

(38) Cuando eras un niño (antes de los 12 años), ¿en qué grado te sentías satisfecho con tu imagen corporal?

Nada satisfecho	
No muy satisfecho	
Bastante satisfecho	
Satisfecho	
Muy satisfecho	

Sección 6: Abuso de sustancias _____

CONSUMO DE TABACO

(39) a) ¿Actualmente, fumas de manera regular?

Sí o No o

Si la respuesta es negativa, pasar a la pregunta 40.

b) ¿Cuántos cigarrillos sueles fumar al día?

Menos de 5 cigarrillos/día	
5-10 cigarrillos/día	
10-20 cigarrillos /día	
20-30 cigarrillos/día	
Más de 30 cigarrillos/día	

(40) ¿En alguna ocasión has fumado de manera regular?

Sí o No o

Si la respuesta es negativa, pasa a la pregunta 42.

(41) ¿A qué edad empezaste a fumar regularmente? ☐

(42) ¿Actualmente, en alguna ocasión has fumado con la finalidad de evitar comer o controlar tu peso?

No, nunca	
Sí, muy raramente (Una vez al mes o menos)	
Sí, ocasionalmente (1-6 veces a la semana)	
Sí, frecuentemente (Cada día)	

(43) ¿Alguna vez, has fumado con la finalidad de evitar comer o para controlar tu peso?

No, nunca	
Sí, muy raramente (Una vez al mes o menos)	
Sí, ocasionalmente (1-6 veces a la semana)	
Sí, frecuentemente (Cada día)	

CONSUMO DE ALCOHOL

	Unidades
1 vaso (25ml) de alguna de los siguientes licores (whisky, ginebra, vodka)	1
1 vaso normal de vino dulce (jerez, martini, porto)	1
1 vaso normal (175 ml) de vino de mesa	1
1 pinta de cerveza	2
1 lata de cerveza (330ml)	1'5
1 pinta de cerveza especial o súper	4
1 lata de cerveza especial o súper (330 ml)(más grados de alcohol)	3
1 botella de vino de mesa (750ml)	7
1 litro de vino de mesa	10
1 botella de vino dulce (750ml)	14
1 botella de licor (750ml)	30

(44) a) ¿Actualmente, bebes alcohol de manera regular?

Sí o No o

Si la respuesta es negativa, pasa a la pregunta 45

b) ¿Qué cantidad de alcohol sueles beber en una semana normal? *(ver la tabla superior para tener referencia sobre las unidades de cada bebida)*?

Menos de 7 unidades/semana	
7-14 unidades/semana	
15-21 unidades/semana	
22-28 unidades/semana	
29-35 unidades/semana	
36-48 unidades/semana	
Más de 48 unidades/semana	

(45) ¿En alguna ocasión has bebido alcohol de manera regular?

Sí o No o

Si la respuesta es negativa, pasa a la pregunta 47.

(46) ¿A qué edad empezaste a beber alcohol de manera regular? ☐

(47) ¿Actualmente, has experimentado en alguna ocasión una pérdida de control en relación a la bebida?

No, nunca	
Sí, muy raramente (Menos de tres veces al año)	
Sí, ocasionalmente (Menos de una vez a la semana)	
Sí, frecuentemente (Una vez a la semana o más)	

(48) ¿En alguna ocasión, has experimentado una pérdida de control en relación a la comida?

No, nunca	
Sí, muy raramente (Menos de tres veces al año)	
Sí, ocasionalmente (Menos de una vez a la semana)	
Sí, frecuentemente (Una vez a la semana o más)	

CONSUMO DE DROGAS

(49) ¿En alguna ocasión, has tomado alguna droga legal o medicación con el fin de controlar la sensación de hambre o el peso?

Sí o No o

(50) ¿En alguna ocasión, has tomado alguna droga ilegal con el fin de controlar el hambre o el peso?

Sí o No o

(51) Por favor, a continuación completa la siguiente pregunta siguiendo los pasos 1 y 2.

Paso 1: *En la primera columna, indica si en alguna ocasión has consumido alguna de las drogas que se señalan a continuación.*
Paso 2*: En la segunda columna, indica con qué frecuencia estás consumiendo en la actualidad cada una de estas drogas.*

	Ha consumido alguna vez (Paso 1)		**Frecuencia de consumo actual** (Paso 2)		
	Sí	No	Nunca	Ocasional	Regularmente
	(1)	(0)	(0)	(1)	(2)
a) Cannabis (hachís, marihuana)	☐	☐	☐	☐	☐
b) Cocaína (o crack)	☐	☐	☐	☐	☐
c) Tranquilizantes, hipnóticos (p.e. Valium,Tranxilium) *Sólo anotar en caso de que se haya tomado más dosis de la prescritas*	☐	☐	☐	☐	☐
d) Pegamento/aerosoles etc.	☐	☐	☐	☐	☐
e) Drogas por vía intravenosa (ej. heroína)	☐	☐	☐	☐	☐
f) Anfetaminas (speed)	☐	☐	☐	☐	☐
g) Éxtasis	☐	☐	☐	☐	☐
h) Otras drogas ilegales (LSD, ..)	☐	☐	☐	☐	☐

CURRICULUM VITAE: KATARINA GUNNARD

DATOS PERSONALES

Fecha de nacimiento: 20/08/1982
Lugar de nacimiento: Lidköping, Suecia
Nacionalidad: Sueca
Estado civil: Soltera
Dirección: C/ Magallanes 31 3º 1ª
E-mail: katarinagunnard@gmail.com
Móvil +34 664587487

DATOS ACADEMICOS

2010 -2011 MD Doctoranda, Universidad de Barcelona, Investigación y trabajo clínico de Trastornos de la conducta Alimentaría y Juego Patológico
Línea de investigación: Neurociencias clínicas y experimentales

2009-**Diploma de Estudios Avanzadas (DEA)**, Universidad de Barcelona. La calificación total ha sido EXCELLENTE (12 créditos).

2008- **MD/PHD cursos** en Personalidad, desarrollo y comportamiento anormal, Universidad de Barcelona. La calificación total ha sido EXCELLENTE (2,65) (20 créditos).

2003-2007 Licenciada de Psicología: MA (honours) Psychology (2.1), University of Edinburgh, Reino Unido.
M.A Thesis: Eating attitudes and family relationships.

1999-2001 Social sciences program in English (SE)/International Baccalaureate
Sigtuna Skolan Humanistiska Läroverket, Suecia

EXPERIENCIA PROFESIONAL

2008 –2011 Psicóloga clínica e investigadora contratada a través de la beca FI (FI-DGR 2007) por AGAUR para IDIBELL:
-Unidad de Trastornos de la Conducta Alimentaría de Hospital Universitario de Bellvitge coordinado por Dr. Fernando Fernández Aranda, Jefe de Unidad.
-Unidad de Juego Patológico de Hospital Universitario de Bellvitge coordinado por Susana Jiménez-Murcia, Jefe de Unidad.

2010-actualmente Psicóloga clínica para niños y adultos
-International Psychologist Project in Barcelona y atiendo pacientes, tanto niños como adultos en Sueco, Ingles y Francés.

Estancias (1-5meses) en centros extranjeros como parte de MD Europeo**:**
Abril 2011- Junio 2011 Institute of Psychiatry, Londres, Reino Unido
Tema: Risk factors and emotions in a cross-cultural eating disorders sample
Agosto 2010 – Diciembre 2011 Stockholms centrum för ätstörningar, Estocolmo, Suecia
Tema: Eating Disorders: Risk factors, expectations and clinical implications

2008-2011 Cuidadora de niños con discapacidades
- A particulares durante fines de semana.

Julio 2006-Septiembre 2006 Practicas, Unidad de Trastornos de la Conducta Alimentaría, Hospital Universitario de Bellvitge, España.

Junio 2005- Agosto 2005 Asistente personal, Kungsholmens Hemtjänst, Estocolmo, Suecia.

Junio 2004-Agosto 2004 Asistente sanitaria a pacientes con Parkinson, stroke y MS, Humlegården, Sigtuna, Suecia.

Junio 2003-Agosto 2003 Asistente personal, Olivia assistens, Estocolmo, Suecia.

ACTIVIDAD CLINICA DESARROLLADA

Enero 2008- Diciembre 2011 Psicóloga clínica en el Hospital Universitario de Bellvitge realizando:

- Grupos de **Ergoterapia** para pacientes con Anorexia Nervosa.
- Grupos de **CBT** para pacientes con Anorexia Nervosa o EDNOS.
-Grupos de **terapia para familiares** de pacientes.
- **Primeras visitas** de pacientes.
- **Evaluaciones y diagnóstico** de pacientes.
- **Informes** psicológicos.
- Monitorizaciones de comedores para **Hospital del Día** de trastornos de la Conducta Alimentaría.
- Seguimiento de pacientes.

ACTIVIDAD DOCENTE DESARROLLADA

2009-2011 Docente de la asignatura Psicología, del Grado de Medicina Molecular, del Departamento de Ciencias Clínicas, Facultad de Medicina, Universitad de Barcelona.

2009-2011 Docente de la asignatura Investigación en intervención psicológica, del Máster Oficial Investigación en Personalidad y Comportamiento, Universitad de Barcelona.

ACTIVIDAD INVESTIGADORA DESARROLLADA

January 2008- December 2011 Predoctorals Research Funding (FI)
Awarding body: **AGAUR**
Project: New Technologies in ED, Eating Disorder Unit, Psychiatric Department, University Hospital of Bellvitge, Barcelona.
PHD/MD researcher: Katarina Gunnard
Head researcher: Fernando Fernandez-Aranda

(Ver Anexo)

IDIOMAS

Sueco – Lengua materna **Inglés** – Lengua materna
Castellano – Muy avanzado **Francés** –Avanzado
Catalán – Avanzado **Alemán**- Básico

INFORMÁTICA

Nivel profesional, Windows (todas las versiones), Ms-DOS, Office y todo tipo de aplicaciones PC.

Conocimientos avanzados de paquetes estadísticos SPSS y Access.

OTROS MÉRITOS

2009- actualmente Revisora externa de European Eating Disorders Review.

2007- actualmente Traductora de cuestionarios y manuales de sueco-inglés, inglés-sueco, sueco-inglés, inglés-sueco.

REFERENCIAS

Dr. José Manuel Menchón Magriñá, Jefe del Servicio de Psiquiatría, Hospital Universitario de Bellvitge. (jmenchon@bellvitgehospital.cat)
Dr. Susana Jiménez-Murcia, Jefe de la Unidad de Juego Patológico, Hospital Universitario de Bellvitge. (sjimenez@bellvitgehospital.cat)
Dr. Fernando Fernández-Aranda, Jefe de la Unidad de Trastornos de la Conducta Alimentaria, Hospital Universitario de Bellvitge.
(ffernandez@bellvitgehospital.cat)

ANEXO

PUBLICACIONES

1.) Forcano, L., Santamaría, J., Agüera, Z., **Gunnard, K.**, Tchanturia, K., Treasure, J., Granero, R., Jiménez-Murcia, S., & Fernández-Aranda, F. (2008). Eating symptomatology and psychopathology among patients with Bulimia nervosa: Comparison between Spanish native-born and Latin-American immigrants. International Journal of Child and Adolescent Health, 1 (4), 365-372.

2.) Peñas-Lledó, E., Fernández-Aranda, F., Jiménez-Murcia, S., Granero, R., Penelo, E., Soto, A., **Gunnard, K.**, & Menchón, JM. (2009). Subtyping eating disordered patients along drive for thinness and depression. Behaviour Research and Therapy, 47(6), 513-9.

3.) Aymamí, MN., Granero, R., Penelo, E., Fernández-Aranda,F., Krug, I., **Gunnard, K.**, Santamaría, J., Bueno, B., Jaurrieta, N., Gómez Peña, M., Álvarez-Moya, E., Menchón, JM., & Jiménez-Murcia, S. (submitted). Anger in pathological gambling: clinical, psychopathological and personality correlates.

4.) Gómez-Peña M., Penelo E., Granero R., Fernández-Aranda F., Álvarez-Moya E., Santamaría J., Moragas L., Aymamí, MN., Bueno, B., Gunnard, K., Menchón, JM., & Susana Jiménez-Murcia (2010). Motivation to change and pathological gambling: Analysis of the relationship with clinical and psychopathological variables. British Journal of Clinical Psychology. DOI:10.1348/014466510X511006.

5.) Santamaría, J., Soto, A., Fernandez-Aranda, F., Krug, I., Forcano, L., **Gunnard, K.,** Kalapanidas, E., Lam, T., Raguin, T. Davarakis, C., Menchón, JM., & Jiménez-Murcia, S. (submitted). Serious Games as additional Psychological Support: A review of the literature. Cyberpsychology and Behaviour Therapy.

6.) **Gunnard, K.,**; Krug, I., Jiménez-Murcia, S., Penelo, E., Granero, R., Treasure, J. Tchanturia, K., Collier, D., Menchón, JM., & Fernández-Aranda, F. (2011). Relevance of social and self-expectations in Eating Disorders. European Eating Disorders Review.

7.) Jimenez-Murcia, S., Aymami, MN., Gomez-Peña, M., Santamaria, J., Alvarez-Moya E., Fernandez-Aranda, F., Granero, R., Penelo, E., Bueno, B., Moragas, L., **Gunnard, K.,** & Menchón, JM (submitted). Does Exposure and Response Prevention Improve the Results of Group Cognitive-Behavioural Therapy for Male Slot Machine Pathological Gamblers? British Journal of Clinical Psychology.

8.) Jiménez-Murcia, S., Penelo, E., Granero, R., Fernández-Aranda, F., Stinchfield, R., Aymamí, MN., Gómez-Peña, M., **Gunnard, K.,** Soto´ A., Nasarre, M. & Menchón, JM. (submitted) Gender and Responsible Gambling: The SGQW a new screening instrument.

PRESENTACIONES PÚBLICAS

1.) Fernando Fernández-Aranda, Susana Jiménez-Murcia, Eva M. Álvarez-Moya, Roser Granero, Eva Penelo**, Katarina Gunnard**, Antonio Soto, Isabel Sánchez, Nadine Riesco, Pino Alonso, Cinto Segalàs, Eva Real, Alberto Pertusa, Mikel Urretavizcaya, Virginia Soria, Jose M. Crespo and Josep M. Menchón-Magriñá

(2008). Personality traits (Character and Temperament) in psychiatric patients: Are there evidences for obsessive-compulsive spectrum? International Conference on Obsessive-compulsive Spectrum Disorders, 3rd. September, Barcelona, Spain.

2.) **Gunnard, K.**, Krug, I., Moragas, L., Bove, F., Jiménez-Murcia, S., y Fernandez-Aranda, F. (2008). Inaccurate self-expectations and relevance of emotional factors in Eating disorders: A case-control study. II International Symposium of CIBER Physiopathology of Obesity and Nutrition, 26-28 November, Isla de la Toja, Spain.

3.) Antonio Soto, Juanjo Santamaría, Isabel Krug, Laura Forcano, **Katarina Gunnard**, Elias Kalapanidas, Dimitri Konstantas, Todor Ganchev, Otilia Kocsis, Tony Lam, Thierry Raguin, Christian Breiteneder, Hannes Kaufmann, Costas Davarakis, Fernando Fernandez-Aranda, Susana Jiménez-Murcia. (2009). A Review of Serious Games as Psychological Support in Health. 13th International Conference of on Information Visualisation (VIZ09), 15-17 July, Barcelona (Spain).

4.) Fernando Fernández-Aranda; Susana Jiménez-Murcia; **Katarina Gunnard**; Elias Kalapanidas; Dimitri Konstantas; Todor Ganchev; Otilia Kocsis; Tony Lam; Thierry Raguin, Juan J. Santamaría; Antonio Soto; Christian Breiteneder, Hannes Kaufmann, Maher Ben Moussa; Miriam Vollenbroek-Hutten; Rianne Huis in 't Veld; Hermie Hermens; Jens Juul Jacobsen; Jørgen Krabbe; Costas Davarakis (2009). Playmancer project: A serious videogame as additional therapy tool for eating disorders. In symposium (Chair U. Schmidt) New Technologies in the treatment of eating disorders. European Council on Eating Disorders, September 11-13th, London, UK.

5.) Peñas-Lledó, E.; Fernández-Aranda, F.; Jiménez-Murcia; Granero, R.; Penelo, E.; Soto, A.; **Gunnard, K.**; Menchón, JM. (2009). Subtyping eating disordered patients along Drive for Thinness and Depression. European Council on Eating Disorders, September 11-13th, London, UK.

6.) Fernando Fernández-Aranda; Susana Jiménez-Murcia; **Katarina Gunnard**; Elias Kalapanidas; Dimitri Konstantas; Todor Ganchev; Otilia Kocsis; Tony Lam; Thierry Raguin, Juan J. Santamaría; Antonio Soto; Christian Breiteneder, Hannes Kaufmann, Maher Ben Moussa; Nadia Magnenat-Thalmann; Miriam Vollenbroek-Hutten; Rianne Huis in 't Veld; Hermie Hermens; Christian Schoenauer; Thomas Pintaric, Jens Juul Jacobsen; Jørgen Krabbe; Costas Davarakis (2009). A Serious Videogame as additional therapy tool for Eating disorders: PlayMancer EU project. INTACT International Symposium- The Dynamics of Eating Disorders: Towards a better understanding of the processes of falling ill, getting well and staying well, November 12th-14th., Universidad do Minho, Braga (Portugal).

7.) Juan J. Santamaría; Susana Jiménez-Murcia; **Katarina Gunnard**; Elias Kalapanidas; Costas Davarakis; Antonio Soto; Fernando Fernández-Aranda; Playmancer Consortium (2009). A serious videogame as additional therapy tool for bulimia nervosa and binge eating disorders: PLAYMANCER EU Project. III International Symposium of CIBER Physiopathology of Obesity and Nutrition, 25-27 November- 2009, Isla de la Toja, Spain.

8.) Fernando Fernández-Aranda; Howard Steiger; Susana Jiménez-Murcia; Mimic Israel; Roser Granero; Remeie Prat; Antonio Soto; **Katarina Gunnard**; Nadine Riesco; José M Menchón (2009). Self-harm behaviors in Eating disorders subtypes: Analysis of the relevance of personality traits and gender. III International Symposium of CIBER Physiopathology of Obesity and Nutrition 25-27 November- 2009, Isla de la Toja.

9.) **Katarina Gunnard**; Eva Peñas-Lledo; Fernando Fernández-Aranda; Antonio Soto; Susana Jiménez-Murcia; Francesca Bove; Roser Granero; Eva Penelo; José Manuel Menchón (2009). Subtyping eating disordered patients along drive for thinness and depression. III International Symposium of CIBER Physiopathology of Obesity and Nutrition, 25-27 November- 2009, Isla de la Toja.

10.) Juan J. Santamaría; Susana Jiménez-Murcia; **Katarina Gunnard**; Elias Kalapanidas; Costas Davarakis; Antonio Soto; Fernando Fernández-Aranda; Playmancer Consortium (2009). A serious videogame as additional therapy tool for bulimia nervosa and binge eating disorders: PLAYMANCER EU Project. III International Symposium of CIBER Physiopathology of Obesity and Nutrition, 25-27 November- 2009, Isla de la Toja.

11.) Antonio Soto, Juanjo Santamaría, Isabel Krug, Laura Forcano, **Katarina Gunnard,** Elias Kalapanidas, Dimitri Konstantas, Todor Ganchev, Otilia Kocsis, Tony Lam, Thierry Raguin, Christian Breiteneder, Hannes

Kaufmann, Costas Davarakis, Fernando Fernandez-Aranda, Susana Jiménez-Murcia. (2009). A Review of Serious Games as Psychological Support in Health. 13th International Conference of on Information Visualisation (VIZ09), 15-17 July, Barcelona (Spain).

12.)Fernando Fernández-Aranda**;** Susana Jiménez-Murcia; Juan J. Santamaría; Antonio Soto; **Katarina Gunnard**; Elias Kalapanidas; Costas Davarakis; and Playmancer Consortium (2010). A serious videogame as additional therapy tool for bulimia nervosa and binge eating disorders: Playmancer multicenter European Project**.** Eating Disorders Research Society 16th Annual Meeting, October 7-9, Boston, USA

13.) Jiménez-Murcia, S, Fernández-Aranda, F.; Granero, R.; Penelo, E.; Aymamí, MN ; Gómez-Peña, M.; Soto, A ; Nasarre, M.; **Gunnard, K;** Menchón, JM. (2010). Social gambling and gender: factors implied in the maintenance of a responsible gambling behaviour. November 14-15. Annual NCRG Conference on Gambling and Addiction: Redefining Diagnosis, Treatment, Research and Responsible Gaming for the 21st Century. Las Vegas. USA.

14.) Fernando Fernández-Aranda ; Susana Jiménez-Murcia; Juan J. Santamaría; Antonio Soto; **Katarina Gunnard;** Elias Kalapanidas; Costas Davarakis; and Playmancer Consortium. (2010). A Serious Videogame as Additional Therapy Tool for Pathological Gambling: Playmancer Multicenter European Project. November 14-15. Annual NCRG Conference on Gambling and Addiction: Redefining Diagnosis, Treatment, Research and Responsible Gaming for the 21st Century. Las Vegas. USA.

COLABORACIONES PROJECTOS

Enero 2008- Diciembre 2011 Predoctorals Research Funding (FI)
Awarding body: **AGAUR**
Project: New Technologies in ED, Eating Disorder Unit, Psychiatric Department, University Hospital of Bellvitge, Barcelona.
PHD/MD researcher: Katarina Gunnard
Head researcher: Fernando Fernandez-Aranda

2011- Research project funding for adolescent studies and analysis
Awarding body: **AGAUR**
Project: Study of social gambling and young people in Catalunya: Analysis of the protective factors implied in the habits of responsible gambling.
Head researcher: Susana Jiménez-Murcia

Enero 2011-Octubre 2011
Collaboration: GHQ and CAGI translation and adaption. The collaboration consists of translating the two questionnaires of pathological gambling and applying them in cross-cultural studies and projects.
Project Manger Spain: Susana Jiménez-Murcia
Project Manager United States of America: Randy Stinchfield

2007-2011 Seventh Framework Programme ICT (Information and Communication Technologies)
Awarding body: **European Union**
Project: PlayMancer: A European Serious Gaming 3D Environment (FP7 215839), IDIBELL and University Hospital of Bellvitge.
Head researcher Spain: Fernando Fernandez-Aranda
Collaborator: Susana Jiménez Murcia

2007-2011 CIBER (Research network of excellence)
Awarding body: Carlos III Institute - Ministry of Health and Consumption
Area: Physiopathology of Obesity and Nutrition- CB06/03 (CIBEROBN)
Head researcher and group director: Fernando Fernández- Aranda

OTRAS CONFERENCIAS, CURSOS Y SEMINARIOS

1.) Annual International Conference on Eating Disorders: Academy for Eating Disorders (AED), 7-10/06 2006, Barcelona.

2.) *"XIII International Symposium: Updates and controversies in Psychiatry: Risk factors in Psychiatry"*. Organized by the Psychiatric department of the University Hospital of Bellvitge and the Psychiatry Unit of the University Hospital Germans Trias i Pujol. 26-27/04/ 2007, Barcelona.

3.) *"XV International Symposium: Updates and controversies in Psychiatry: Beyond nosology Kraepeliana"*. Organized by the Psychiatric department of the University Hospital of Bellvitge and the Psychiatry Unit of the University Hospital Germans Trias i Pujol. 3-4/04/2008, Barcelona.

4.) *"XVI International Symposium: Updates and controversies in Psychiatry: Suicidal behaviour"*. Organized by the Psychiatric department of the University Hospital of Bellvitge and the Psychiatry Unit of the University Hospital Germans Trias i Pujol. 26-27/04 2009, Barcelona.

5.) 13th International Conference on Information Visualization, VIZ09, 15 -17/07/2009, Barcelona.

6.) TIC and Mental Health conference, mental health in the XXI century, Organized by the Sant Boi de Llobregat City Council. 15/12/2009, Barcelona.

7.) *"XVII International Symposium: Updates and controversies in Psychiatry: Hallucinations and delusions"*. Organized by the Psychiatric department of the University Hospital of Bellvitge and the Psychiatry Unit of the University Hospital Germans Trias i Pujol. 15-16/04/2010, Barcelona.

8.) *"XIV National Psychiatry Congress".* Organized by the Spanish Psychiatry Society, The Spanish Biological Psychiatry Society and the Spanish Psychiatry and Mental Health Foundation. 18-22/10/2010, Barcelona.