

## Poster Presentations Session I

Thursday, May 2, 2013

7:00 – 8:30 p.m.

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### BED & Obesity

#### T1

#### **Emotion Dysregulation in Children and Adolescents With and Without Loss of Control Eating**

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Affective theories propose that deficits in emotion regulation contribute to the onset and maintenance of disordered eating. Limited data suggest a relationship between emotion dysregulation (EMO-DYS) and obesity; yet, no prior studies have examined EMO-DYS in relation to pediatric loss of control (LOC) eating or actual energy intake. Therefore, we examined EMO-DYS in relation to LOC, disordered eating pathology, and observable eating behavior in 411 community youths (8-18y). Parental report on the Emotion Dysregulation Index of the Child Behavior Checklist assessed EMO-DYS in children. Youths were administered the EDE to determine LOC presence and disordered eating attitudes, and air displacement plethysmography assessed fat-free mass and adiposity. A subset of youth ( $n=223$ ) ate ad libitum from two test meals on different days that were designed to model normal eating and LOC episodes. Youth with LOC had higher EMO-DYS than those with no LOC ( $p=.01$ ). EMO-DYS was positively associated with BMI-z, adiposity, and all EDE scales ( $ps<.05$ ). Significant interactions revealed that the combination of high EMO-DYS and LOC was related to the highest BMI-z, fat mass, eating concern, and weight concern compared to all other groups ( $ps<.03$ ). Adjusting for age, sex, race, height, fat-free mass, % fat mass, and LOC, EMO-DYS was positively correlated with overall energy intake (kcal) across both test meals ( $p=.001$ ). Controlling for all covariates, EMO-DYS also was associated with greater pre-meal negative mood ( $p=.01$ ). There was a significant interaction of EMO-DYS and LOC for post-meal negative affect, such that youth with high EMO-DYS and LOC had greater post-meal negative mood than those with only high EMO-DYS or LOC ( $p=.01$ ). Findings suggest that emotion regulation is associated with eating pathology, adiposity, and energy intake in youth. Data are required to determine if emotionally dysregulated youth with LOC are especially prone to developing obesity and eating disorders.

#### **Learning Objectives:**

- Describe the theoretical relationship between emotional dysregulation and the onset and maintenance of disordered eating and excess weight gain.
- Understand how the co-occurrence of emotion dysregulation and loss of control eating impact eating and weight outcomes in youth.
- Discuss assessment and intervention approaches for emotionally dysregulated youth with disordered eating and weight problems.

#### T2

#### **A Neuroimaging Study: Relationships Between Binge Eating Behaviors, Impulsivity and BMI**

*Erica Orenstein, BA, University of Kansas Medical Center, Kansas City, KS, USA; Laura Martin, PhD, University of Kansas Medical Center, Kansas City, KS, USA*

Over half of the United States' population is expected to be obese by 2030 and Binge Eating Disorder (BED) affects approximately 2-5%. Binge eating is characterized by episodes of overeating, where the individual feels powerless against his or her actions and is affected by guilt and embarrassment afterwards. Impulsivity may play a significant role in binge eating, since the behaviors have a basis in lack of control. Previous research has found that the binge eating population differs from both normal controls and obese individuals without BED in terms of impulsivity, suggesting there is a significant difference in the temperament of a binge eater. The current research study evaluates the relationship between self-reported bingeing behavior, using the Gormally Binge Eating Scale (BES), and brain responses during impulsive decision-making, measured with a delayed discounting task. Nineteen participants (13 female) with BES scores greater than 26, participated in this neuroimaging study during which they were asked to choose between a smaller, immediate reward and a larger, delayed reward. For high bingeing individuals, body mass index (BMI) was positively correlated with brain activation when choosing the immediate option versus the delay. The three significant activation areas were the superior frontal gyrus, ventromedial prefrontal cortex, and medial prefrontal cortex. These results indicate that among individuals with severe binge eating symptoms, BMI may have a direct relationship with impulsivity. This distinction will not only be useful in the treatment of BED, but it also suggests there are many unique factors to consider in order to decrease the rates of obesity.

#### **Learning Objectives:**

- Describe the relationship between impulsivity and binge eating behaviors.
- Describe the brain regions associated with obesity and binge eating behaviors.
- Gain an understanding of the role that neuroimaging can play in understanding obesity.

### **T3**

#### **Binge Eating, Body Mass Index and Gastrointestinal Symptoms**

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Whereas the association between body mass index (BMI) and gastrointestinal (GI) symptoms is well-established, the potential impact of binge eating (BE) on GI symptoms has not been elucidated. Both gastroesophageal reflux disease (GERD) and irritable bowel syndrome (IBS) are characterized by several GI symptoms frequently reported by individuals with eating disorders, particularly those with a history of BE. Given the associations of BE with both obesity and GI symptoms, the current study evaluated whether BE moderated the association between BMI and measures of GERD and IBS. Participants were from the Swedish Twin study of Adults: Genes and Environment (N = 6,827 men and 8,841 women) who responded to questions about eating disorder history, BMI, and GI measures. GERD and IBS measures were created based on hallmark features of the disorders. Logistic regression models, stratified by sex, were used to evaluate the association of GERD and IBS measures with BE (while accounting for purging) and BMI. In men, the association between BMI and GERD hallmarks remained statistically significant even when BE was entered into the model as a moderator (all p-values < .01). In women, BMI and GERD hallmarks were statistically significantly associated even when BE was introduced as a moderator (all p-values < .05). However, BE did appear to play a moderating role in the association between BMI and IBS hallmarks (all p-values < .05). These findings expand current knowledge on how the association between BMI and GI measures, particularly IBS, may be impacted by BE. This knowledge may help to inform both researchers and clinicians about the maintaining factors involved with GI disorders and provide directions for treatment interventions.

#### **Learning Objectives:**

- Investigate the association between binge eating and clusters of gastrointestinal symptoms.
- Evaluate the association between BMI category and clusters of gastrointestinal symptoms.
- Assess the extent to which binge eating might moderate the association between BMI category and clusters of gastrointestinal symptoms.

### **T4**

#### **The Minnesota Multiphasic Personality Inventory - 2 Restructured Form (MMPI-2-RF) and Binge Eating Disorder (BED): Scale Score Differences in Bariatric Surgery Candidates Diagnosed with BED vs. Matched-BMI Controls**

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Binge Eating Disorder (BED) is one of the most common psychiatric disorders in bariatric surgery candidates, and several studies have suggested that the presence of a comorbid psychiatric disorder is linked to binge eating behaviors. The Minnesota Multiphasic Personality Inventory – 2 Restructured Form (MMPI-2-RF) is a broadband psychological measure that has been previously used in this population. Measures of emotional and behavioral dysfunction on the MMPI-2-RF have been associated with BED in bariatric surgery candidates; however these studies have lacked appropriate controls. The purpose of the current study is to examine MMPI-2-RF scale scores in evaluating bariatric surgery patients diagnosed with BED (BED+) compared to Body Mass Index (BMI)-matched controls without BED (BED-). A subset of 307 BED+ participants (71.2% female and 68.7% Caucasian) were drawn from a large, retrospective database (N = 1304). The BED+ group had a mean BMI of 51.1 kg/m<sup>2</sup> (SD = 11.8). BED- participants were matched on BMI and demographics. Because both genders produced similar patterns of scores on the MMPI-2-RF within each group, we combined gender and conducted independent sample t-tests to examine scale score differences between BED+ and BED-. The BED+ group scored significantly higher on Demoralization (t = 4.07, p < .001), Low Positive Emotions (t = 3.53, p < .001), and Dysfunctional Negative Emotions (t = 3.43, p < .01) as well as a number Specific Problems Scales. BED- scored lower on measures of behavioral disinhibition [Antisocial Behavior (t = 4.46, p < .001)]. BED+ produced greater elevations on a number of MMPI-2-RF internalizing scales, whereas BED- reported lower externalizing scores that are suggestive of more controlled behavior than BED+. These results suggest the importance of a thorough assessment of binge eating and psychopathology in bariatric candidates. Further, those who are BED+ may require closer psychological follow-up pre- and post-surgically.

### **Learning Objectives:**

- Summarize the literature that suggests the presence of comorbid psychiatric dysfunction in those who have a BED diagnosis.
- Comprehend the general structure and various scales of MMPI-2-RF, and discuss how it aids in the assessment of binge eating and psychopathology in bariatric candidates.
- Generate additional hypotheses regarding the assessment and treatment of those who present with BED in bariatric surgery candidates as well as how the MMPI-2-RF can be extended to assessing obese/non-obese individuals with BED.

### **T5 Emotional Eating Among Obese Adults With and Without Comorbid Depression Symptoms**

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Depression and obesity are prevalent conditions associated with significant morbidity and mortality. There is a modest relation between the two, but mechanisms involved in this relation are unclear. Disturbances in eating behavior are characteristic of both disorders, and eating to alleviate negative affect may offer one explanation for the relation between the two conditions. To examine this hypothesis, we subtyped 50 obese (M BMI=40.3±8.5) adults (M age=43.0±11.9; 84% female) by presence or absence of depression symptoms according to a Beck Depression Inventory (BDI) cutoff of 14, indicating “probable depression.” Participants with (BDI≥14; n=15) and without depression symptoms (BDI<14; n=35) were compared on emotional eating measured via questionnaire and ecological momentary assessment (EMA) using ANCOVA and mixed model regression, controlling for group differences in body mass index [t(50)=2.3; p=.03]. Relative to non-depressed controls, depressed participants reported greater emotional eating on the Dutch Eating Behavior Questionnaire emotional eating scale [F(1,50)=4.3; p=.04], and more frequent binge eating on EMA recordings (Wald chi-square=13.8; p<.001). Negative affect assessed via EMA was elevated prior to both normal (linear estimate=-3.6; S.E.=1.5; p=.02) and binge eating episodes (linear estimate=-4.1; S.E.=2.0; p<.05) in these participants, compared to controls. Results suggest that emotional eating, including binge eating, is more common among depressed obese adults than their non-depressed counterparts. Recurrent aberrant eating may promote the onset and/or maintenance of obesity in depressed individuals, although directionality could not be established in the current study. Interventions for depressed individuals should address disordered eating to prevent or minimize weight-related problems. Future studies should examine if eating to modulate negative affect mediates the relation between obesity and depression using a longitudinal design.

### **Learning Objectives:**

- Understand aberrant eating patterns in obese adults with comorbid depression symptoms.
- Speculate about potential pathways among obesity, emotional eating, and depression.
- Consider how interventions for depression and/or obesity may incorporate a focus on aberrant eating.

### **T6 Attentional Bias Re-training of Food Cues in Obese Women**

*Eva Kemps, PhD, Flinders University, Adelaide, Australia; Marika Tiggemann, PhD, Flinders University, Adelaide, Australia; Sarah Hollitt, BSc, Flinders University, Adelaide, Australia*

Accumulating research shows that obese individuals selectively attend to food and eating cues. Such biased attentional processing is thought to play a role in the development and maintenance of (over)eating. The present study investigated whether attentional biases for food cues in obese individuals can be modified. Using a dot probe paradigm, 60 community dwelling obese women (26-67 years) were trained to direct their attention either towards ('attend' group), or away from ('avoid' group), pictured food cues (e.g., chocolate, strawberry). Attentional bias was assessed both before and after training. Following the post-training assessment, participants were also administered a word stem completion task. In this task, participants were presented with 3-letter word stems (e.g., ROA\_\_\_), which could be completed as either a food related word (e.g., roast), or a word that is not related to food (e.g., road). As predicted, attentional bias for food cues increased in the 'attend' group, and decreased in the 'avoid' group. Additionally, the 'avoid' group produced relatively fewer food related words on the word stem task than the 'attend' group. Targeting the attentional processes that underlie the heightened responsiveness to environmental food and eating cues in the obese offers potential scope for tackling unhelpful food and eating-related cognitions and improving the success of weight loss programs.

#### **Learning Objectives:**

- Participants will be able to identify biased attentional processing of food cues as a contributing factor to unhelpful cognitions and dysfunctional eating in obesity.
- Participants will be able to articulate the mechanisms underlying the heightened responsiveness to environmental food and eating cues in obese individuals.
- Participants will be able to conceptualise attentional bias modification as a means for improving the success of weight loss programs.

#### **T7**

#### **Effects of d-Amphetamine Prodrug, Lisdexamfetamine Dimesylate on Impulsivity and Compulsivity in Treatment of Adults With Binge Eating Disorder: Data From a Randomized, Double-Blind, Placebo-Controlled Trial**

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A multicenter 11-week (wk), double-blind, placebo-controlled trial examined efficacy and safety of the prodrug lisdexamfetamine dimesylate (LDX) to treat moderate to severe binge eating disorder (BED). Adults meeting DSM-IV-TR criteria for BED were randomized to LDX (30, 50, or 70mg/d) or placebo. Dose was titrated over 3 wk and maintained for an additional 8 wk. Primary efficacy was change from baseline at wk 11 in binge days/wk on a transformed scale of log (binge days/wk +1), analyzed by a mixed-effects model for repeated measures. A secondary measure was the Yale-Brown Obsessive Compulsive Scale for Binge Eating (YBOCS-BE). Safety assessments included treatment-emergent adverse events (TEAEs). Of 271 randomized participants, safety analyses included 270, efficacy included 266; 58 were discontinued. LDX significantly decreased binge days/wk vs placebo in mean change from baseline at wk 11 in log-transformed values for LDX 50mg/d and 70mg/d ( $P < .001$  for both dose groups) but not 30mg/d ( $P = .347$ ). LS mean (SE) wk 11 changes from baseline in YBOCS-BE total score were -11.4 (0.85), -15.2 (0.83), -15.5 (0.81), and -17.1 (0.81) for placebo and LDX 30, 50, or 70mg/d, respectively ( $P < .002$  for each LDX dose vs placebo); -5.5 (0.44), -7.3 (0.43), -7.4 (0.42), and -8.3 (0.42), respectively, for obsessional ( $P < .003$  for each LDX dose vs placebo) subscores; and -5.9 (0.44), -7.8 (0.43), -8.1 (0.42), and -8.9 (0.42), respectively, for compulsive ( $P < .002$  for each LDX dose vs placebo) subscores. 57.6% in the placebo group and 82.4% in LDX groups experienced TEAEs. For all LDX groups, 1.5% had serious TEAEs, and 2.9% withdrew due to TEAEs. On the primary endpoint, LDX, 50 and 70mg/d, showed efficacy vs placebo in decreased binge days (log-transformed binge days). All LDX doses showed decreased obsessive thoughts and compulsive behaviors. LDX safety profile was generally consistent with its known safety profile in adults. Clinical research was funded by Shire Development LLC

#### **Learning Objectives:**

- Explore the role of impulsivity and compulsivity in binge eating behaviors.
- Understand the potential role of dopaminergic neurotransmission in binge eating disorder (BED).
- Describe the effects of the d-amphetamine prodrug, lisdexamfetamine dimesylate compared with placebo on efficacy and safety outcomes in adults with BED.

#### **T8**

## **Systematic Literature Review of Criteria for Identification and Measurement of BED in Children**

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This systematic review examines prevalence of Binge Eating Disorder (BED) in children, its measurement, and risk factors. BED is the most prevalent eating disorder in the U.S. and cuts across race, socio-economic status, gender and age. However little is known about BED prevalence in children or early behavioral and psychosocial precursors. A systematic review of the literature from 1995 to present was conducted with three goals: 1) identify population level surveys that provide estimates of BED prevalence in U.S. children ages 12 and under; 2) summarize diagnostic criteria and available standardized measures for BED in children; and 3) identify established eating problems in childhood that may be related to BED symptoms and for which there are standardized measures; and 4) identify correlates and known risk factors for BED in children. Our review identified no nationally representative survey estimating prevalence of BED among children 12 and under; however the National Comorbidity Study estimated BED prevalence at 1.4% and subthreshold BED at 2.4% among adolescents aged 13-14 years. Onset of BED was reported as early as age 4, the youngest age of onset reported among all EDs. There are no published diagnostic criteria for BED in children and no standardized measures of BED for children under age 12. Neither the DSM-IV nor DSM-5 provides criteria for BED specifically in children. Two measures, Loss of Control Eating Disorder, and Eating in the Absence of Hunger are validated among children and characterize disinhibited eating behaviors and emotional eating, respectively. Risk factors for BED in children include high levels of eating concern, negative urgency, early dieting and emotional eating. Further research is needed to develop an empirical base for identification and prevention of BED in children.

### **Learning Objectives:**

- Describe the prevalence of BED in children.
- Explore potential criteria for BED in children.
- Identify measures of BED and related problematic eating behaviors in children.

## **Biology & Medical Complications**

### **T9**

#### **Brain Activation Associated with Set-Shifting and Central Coherence Skills in Patients with Anorexia Nervosa**

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Patients with Anorexia Nervosa (AN) have neuropsychological deficits in set shifting (SS) and central coherence (CC) consistent with inflexible thinking styles and an inability to 'see the big picture.' This study investigates brain activation during SS and CC tasks, correlations with neuropsychological measures, and exploratory associations with clinical outcome following treatment. fMRI data were collected from 21 AN females while performing the Wisconsin Card Sorting test (WCST) to probe SS ability and the Embedded Figures Task to probe CC ability. Measures collected outside the scanner at baseline and post treatment include Body Mass Index (BMI), the Delis-Kaplan Executive Functioning Scale (DKEFS), and the Rey-Osterrieth complex figure (Rey-O). Results showed that significant brain activation during the SS task included the bilateral dorsolateral prefrontal cortex (DLPFC), ventrolateral prefrontal cortex (VLPFC/insula), and superior parietal sulcus. Greater DLPFC activation was correlated with greater DKEFS score and higher BMI at baseline. Greater clinical improvement in DKEFS score following treatment was predicted by lower activation in VLPFC/insula. When performing the CC task, activation included bilateral visual cortex and superior parietal sulcus. Greater left superior parietal activation was correlated with greater DKEFS score at baseline. Less visual cortex activation predicted greater improvement in Rey-O style score post treatment. In conclusion, SS skill is associated with prefrontal cortex resources, which may increase as BMI increases. As previous studies have linked activation in the VLPFC/insula with anxiety symptoms, our data suggest that lower anxiety predicts a better response to treatment. During a CC task, greater activation in spatial attention (parietal) regions indicates greater executive function ability. Less visual cortex activation during a CC task may indicate less focus on detail, and predicts better clinical outcome.

### **Learning Objectives:**

- Explore associations between cognitive deficits and clinical outcome following treatment.
- Assess brain region activation correlations during set shifting and central coherence specific tasks in the scanner.
- Examine correlations between brain activated regions and the ability to perform on neuropsychological testing.

### **T10**

#### **Biomarkers for Anorexia Nervosa in Adolescents**

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There are few sensitive biomarkers of course or outcome of an eating disorder. One study reports changes in transferrin, C3 and C4 levels over a 12-month period. Other found that C3 levels were lower in severe anorexia nervosa compared with controls, and consider C3 levels as a sensitive marker of the illness severity. The aim is to examine the synthesized proteins in the liver as markers of malnutrition in adolescent patients with eating disorders and determine whether serum levels of these proteins may represent developing biomarkers of these disorders in a short-term outcome. Sample (To) of 60 patients completed protocol with BMI and: albumin, pre-albumin, retinol-binding protein, serum transferrin, C3 and C4 complement factors, and total proteins. The assessment was repeated at renutrition (T1) in 43, and at 6-months follow-up (T2) in 28. Statistical analyses with t test and repeated measures ANOVA were carried out. 60 female patients with a mean age of 14.6 years (SD 1.4) and Average duration of illness: 11.3 months (SD 8.4). At To (mean BMI of 16.2 kg/m<sup>2</sup>, SD 1.9), the serum level of C3 was low (83.99, range 86-184 mg/dl). However, the values of serum of albumin, prealbumin, transferrin, C4, and the retinol-binding protein and total proteins were within normal ranges. The C3 was increased not statistically significant at T1 (BMI 18.4) (p <0.09) and statistically significant at T2 (BMI 18.9) (p <0.01) compared to the baseline (To). In ANOVA measures a significant time-effect was revealed (p <0.01) at 6-month period (T2) for albumin, transferrin, C3 and C4 complement factors, and total proteins. The complement factor C3 may be a sensitive biomarker in adolescent patients with an eating disorder. The C3 values normalized after short-term renutrition, maintaining normal serum levels at 6-months follow-up (T2), stage at which patients maintain their nutritional improvement.

#### **Learning Objectives:**

- Assess the severity on adolescent anorexia nervosa by biomarkers different from BMI.
- Examine the synthesized proteins in the liver as markers of malnutrition in adolescent patients with eating disorders.
- Determine whether serum levels of these proteins may represent developing biomarkers of these disorders in a short-term treatment.

#### **T11**

##### **Asymptomatic Spontaneous Subcutaneous Emphysema, Pneumomediastinum, Pneumoperitoneum and Pneumatosis Intestinalis in a Patient Suffering from Anorexia Nervosa: A Case Report**

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Anorexia nervosa is a condition seen in adolescent medicine with a wide range of presenting signs and symptoms. Our report describes the case of an 18 years old women suffering from restrictive anorexia nervosa for several years who presented with a BMI of 9.73 and asymptomatic spontaneous subcutaneous emphysema, pneumomediastinum, pneumoperitoneum and pneumatosis intestinalis. History revealed fatigue, jaw pain and swollen neck over the last few weeks but no abdominal complaint. She denied vomiting. Her vital signs on admission were stable with a heart rate of 74 and a blood pressure of 99/66. On physical exam, there were subcutaneous crackles in the neck and thoracic areas but no respiratory distress. She was successfully managed with supportive care and progressive enteral nutrition including tube feeding and food, leading to a favourable outcome with significant weight gain (BMI of 12.1 at discharge) and resolution of all the radiological and biochemical abnormalities. Her clinical course was however complicated by a refeeding syndrome and Rotavirus gastro-enteritis leading to a pre-shock state. These complications were successfully managed with IV rehydration and phosphate supplements. Our main hypothesis is that her clinical presentation was attributable to her state of severe chronic undernourishment. Our literature review supports the theory that advanced undernourishment can lead to altered interstitial wall composition, which could result in migration of air through weakened alveolar or intestinal wall. This case is of interest given that spontaneous pneumoperitoneum and pneumatosis intestinalis have rarely been described in association with anorexia nervosa, especially in an asymptomatic patient. In addition, her favorable outcome suggests that these patients can effectively be managed with conservative care.

#### **Learning Objectives:**

- Recognize that asymptomatic spontaneous pneumoperitoneum and pneumatosis intestinalis can be a complication of severe undernourishment in patients with anorexia nervosa.
- Consider using progressive enteral nutrition in the management of asymptomatic spontaneous pneumoperitoneum and pneumatosis intestinalis in anorexia nervosa.
- Distinguish symptomatic pneumoperitoneum from spontaneous pneumoperitoneum.

#### **T12**

##### **Eating Behaviors as Predictors of Gestational Weight Gain**

Jennifer Slane, PhD, VA Pittsburgh Healthcare System, Pittsburgh, PA, USA; Michele Levine, PhD, University of Pittsburgh, Pittsburgh, PA, USA

The Institute of Medicine (IOM) recently updated the recommendation for adequate gestational weight gain (GWG). Although research suggests that pre-pregnancy BMI, age, race, and socioeconomic status influence GWG, little is known about the way eating behaviors affect GWG. Further, smoking cessation also affects weight, but little is known about the effect of smoking cessation on GWG. Thus, the present study aimed to evaluate the relationship between eating behaviors and GWG among women who had quit smoking. Participants, all of whom quit smoking before or during their pregnancy (n=110), were assessed during the third trimester. Seventy percent of participants were Caucasian (n=77), and one third was African American (n=33). On average, women in the study were 24 years old, with a pre-pregnancy BMI of 26 and had attended some college. Women self-reported on height and pre-pregnancy weight in order to determine pre-pregnancy BMI. GWG was calculated by subtracting pre-pregnancy weight from their final self-reported prenatal weight. Restraint and disinhibition were assessed during the last trimester using the Three-Factor Eating Questionnaire. The average GWG was 33.15 lbs. with 46% of women gaining weight above the IOM guidelines. Univariate general linear models were used to examine restraint and disinhibition as predictors of GWG. To control for demographic factors that affect GWG, models included race, age, pre-pregnancy BMI, and the number of weeks abstinent from cigarette smoking. Results indicated that restraint was positively associated with greater GWG. By contrast, lower disinhibition was associated with increased GWG. Findings indicated that conscious attempts to restrict intake and disinhibited eating may contribute to larger GWG. Additional research is needed to determine how restraint, disinhibition and other modifiable eating behaviors may relate to GWG over the course of pregnancy.

#### **Learning Objectives:**

- describe factors that contribute to gestational weight gain.
- cite the guidelines for gestational weight gain based on BMI.
- infer suggestions to relay to pregnant women regarding eating behaviors during pregnancy.

### **T13 Individual Variation in Response to a 24-Fast: Effects on Mood, Energy, Cognition, and Body Preoccupation**

*Nancy Zucker, PhD, Duke University Medical Center, Durham, NC, USA; Cynthia Bulik, PhD, FAED, University of North Carolina, Chapel Hill, Chapel Hill, NC, USA; Rhonda Merwin, PhD, Duke University Medical Center, Durham, NC, USA; Karli Watson, PhD, Duke University, Durham, NC, USA*

We examined subjective changes in measures of cognition, affect, visceral sensitivity, and energy in individuals participating in a 24-hour religious fast. One of the more perplexing features of anorexia nervosa (AN) is how the state of starvation; a state typically associated with pain, discomfort, and eventual death; is experienced as reinforcing. One hypothesis is that changes to different biological systems as a function of starvation serve as individual difference variables that increase vulnerability to eating disorder development. A key question in understanding the perils of meal skipping is how quickly negative and positive changes to psychophysiological or cognitive-affective functioning occur. We retrospectively surveyed 53 healthy adults (34 male) about hourly changes in attention, energy, mood, hunger, and visceral sensitivity after a 24-hour religious fast, just prior to breaking the fast. Within the first 5 hours of fasting, there was a distinct subgroup of 6% that experienced an improvement in mood, attention, a decrease in hunger, and an increase in energy. Further, 10% of the group reported being less sensitive to changes in body experience throughout the fast relative to a typical day, and this decreased sensitivity was associated with less scanning of the body for sensations (e.g., heart beating) relative to a typical day. Of interest, individuals who endorsed more negative moods and worse attention on a typical day, experienced greater mood enhancement and attention improvement during the fast. This pattern of results suggests that positive effects of fasting may be experienced by individuals who endorse lower typical mood. Data on trajectories of change will be presented as well as differences as a function of sex and religious fervor. Findings are discussed relative to biological adaptations to starvation both acutely and chronically and in reference to the management of fasting for religious purposes in the context of an eating disorder.

#### **Learning Objectives:**

- Participants will be able to describe biological adaptations that occur as a function of starvation.
- Participants will be able to define positive and negative reinforcement.
- Participants will be given guidelines to clinically manage the desire of patients to participate in fasting for religious purposes during the actively ill and recovered state.

### **Body Image & Prevention**

#### **T14 Predicting Fat Talk: An Integration of Individual and Environmental Variables**

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Fat talk is a social phenomenon in which women and girls express discontent about their bodies' weights and shapes. Although fat talk occurs normatively, it is by no means innocuous. Mounting research shows that it is detrimental to women's body esteem. To date, the literature is virtually absent of model-building empirical studies elucidating the factors that contribute to fat talk although eradication of fat talk rests on understanding fat talk's component predictors. What we do know from the accumulating research is that body dissatisfaction (BD) is a clear and consistent predictor of fat talk. Furthermore, studies show that the more a woman engages in the general process of socially comparing herself with others, the more inclined she is to fat talk. In addition to these known predictors, we tested social-environmental factors, namely, self-objectification (SO) level and the extent to which one receives feedback about one's physical appearance. We hypothesized that level of SO and the amount of appearance-related feedback women receive would be uniquely predictive of their frequency of fat talk, over and above that accounted for by BD and social comparison tendency. Participants ( $N=147$ ) were undergraduate women (ages 18-23) at a Midwestern university who completed a questionnaire packet containing a number of psychometrically-sound body-related and attitudinal measures. Results of a hierarchical regression analysis indicated that, as expected, BD and social comparison tendency each accounted for unique and substantial combined variance in fat talk frequency (combined  $R^2 = .37$ ). Additionally, however, as hypothesized, SO tendency and frequency of appearance-related feedback each explained a significant amount of additional variance in fat talk frequency. Together with BD and social comparison, this set of predictors accounted for almost half (48%) of the variance in women's fat talk.

### **Learning Objectives:**

- Define "fat talk" and summarize the negative consequences associated with this problematic type of conversation among women.
- Describe known predictors of fat talk from prior research.
- Provide empirical evidence for a new model consisting of four strong predictors of fat talk.

### **T15 Team-Level Processes for Addressing and Preventing Disordered Eating: A Comparison of Two Female Collegiate Cross-Country Running Teams**

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Within-team processes for addressing and preventing disordered eating behaviors were compared for two geographically and competitively matched women's collegiate cross-country running teams. A mixed-method approach was used, with all team members ( $n=36$ ) participating in in-depth individual qualitative interviews and completing validated written survey measures, compared using two sample t-tests. Data suggest very different team approaches when suspecting disordered eating: all 16 members of Team 1 described a direct and verbal strategy, approaching the teammate in question first as a friend, then sequentially enlisting the team captain and then the female assistant coach. Of the 20 members of team 2, the dominant approach was best described as "watch and do nothing", with only one person describing a direct verbal approach and no one reporting enlisting captains and/or coaches. This difference in approach was underscored by significantly different scores on the Teammate Anti-Dieting Advice Scale, despite statistically similar scores on the Teammates as a Source of Influence and Perceived Teammate Preoccupation with Weight and Dieting scales. Although causality cannot be ascertained given the cross-sectional study design, these different within-team approaches may have health implications for team members: Team 2 reported a significantly lower mean BMI than Team 1. Informed by the qualitative interviews, social, compositional and contextual differences between teams (including gender, weight and running history of coaching staff) are discussed as related to team-level behavior. With reference to theories of social behavior, including the Theory of Planned Behavior and the Social Diffusion Model, evidence-driven suggestions for preventive interventions to address social and contextual factors in the team environment are discussed.

### **Learning Objectives:**

- Compare and contrast within-team strategies for addressing and preventing disordered eating among team members.
- Describe how the age, gender, weight and sport history of the team coach and nutritionist may influence how comfortable teammates are in enlisting their support in addressing disordered eating among team members.
- Integrate within-team approaches to addressing disordered eating into existing theories of social behavior, and discuss implications for theory-driven preventive interventions.

### **T16 Body Image Dissatisfaction among Gay and Heterosexual Men**

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For the past several decades, researchers and clinicians alike have generally concluded that gay men are at notably higher risk than heterosexual men for developing body dissatisfaction and disordered eating patterns. This conclusion and the accompanying research, however, have recently been subjected to critical evaluation that raises notable concerns regarding the validity of the studies in this literature and the conclusions drawn from them. Specifically, Kane (2011) notes that the existing literature relies heavily on extremely small and biased samples, makes broad claims based on small effect sizes, and fails to conform to appropriate statistical practices. To address these critiques and provide a more detailed picture of body image among gay and heterosexual men, we present the results of three large-scale online studies completed by over 100,000 visitors to a general news website. A variety of items assessing body image were assessed, and both parametric and non-parametric analyses were conducted. While overall differences between gay and heterosexual men on a number of items assessing body image were small, these concerns were substantially moderated by Body Mass Index (BMI) and the aspect of body image assessed. Overall, the results suggest that sexual orientation is a relevant factor in predicting body dissatisfaction, particularly for heavier men. Given the relationship between poor body image and eating disorders, certain gay men may be at heightened risk for developing disordered eating.

### **Learning Objectives:**

- Review the prior literature that has investigated differences in body dissatisfaction and disordered eating in gay versus heterosexual men, and describe recent criticisms of this evidence.
- Report how the sampling and statistical methods utilized in the current study attempt to overcome the limitations of prior research investigating body image in gay men.
- Discuss the impact of the current study's results on the hypothesis that gay men are at higher risk than heterosexual men for developing body dissatisfaction and disordered eating patterns.

### **T17 Testing Sexual Self-Efficacy as a Moderator of the Relationship between Social Comparison and Disordered Eating**

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The purpose of this study is to test sexual self-efficacy as a possible moderator of the social comparison/disordered eating relation. Despite evidence for sexual attitudes and disordered eating being related, little work has sought to combine constructs from these two literatures. Self-efficacy, specifically related to the body (e.g. sexual self-efficacy), may especially link those who socially compare to disordered eating. Participants were 441 female undergraduates who completed an online survey assessing eating disorder-related social comparison behavior, including body, eating, and exercise social comparison behavior, sexual self-efficacy, and disordered eating (EAT-26 & EDE-Q). Results indicated that social comparison was positively correlated with disordered eating (all  $r$ s  $> .18$ ,  $p < .001$ ). Significant moderator findings revealed that the combination of high levels of social comparison and low levels of sexual self-efficacy was associated with the highest levels of EAT-26, weight and shape concern, and restraint. In contrast, social comparison and sexual self-efficacy did not interact to identify levels of binge eating or vomiting. Thus, individuals who have low levels of sexual self-efficacy may be especially vulnerable to the harmful effects of social comparison on disordered eating. Results also highlight that certain disordered eating behaviors/attitudes (i.e. binge eating and vomiting) may not be relevant to this interactive model, while others, centering on restraint and body concerns are. These findings support the need to create interventions targeted at decreasing social comparison and increasing sexual self-efficacy in female undergraduates, with the hope that such intervention efforts will also decrease disordered eating among this population. However, longitudinal work is needed to clarify the temporal ordering of these constructs and confirm causality.

### **Learning Objectives:**

- Understand the link between social comparison, sexual self-efficacy, and disordered eating.
- Distinguish which disordered eating attitudes and behaviors fit this interactive model, and understand why others do not.
- Identify possible interventions designed to decrease social comparison behavior and increase sexual self-efficacy.

### **T18 Media Influence on Body Dissatisfaction and Disordered Eating Among French Undergraduate Males: A Dual-Pathway Model**

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Objective: Increasing research attention has been paid to body image concerns among males, due to the growing pervasiveness of the mesomorphic ideal in the media. The aim of the present study was to explore a media influence model of body image and disordered eating among young men. The hypothetical model proposes a dual body image pathway (dissatisfaction with muscularity and dissatisfaction with body fat) from media influence to body change

behaviors (muscularity enhancement and drive for thinness) and eating disorders. Methods: A sample of 164 French undergraduate men of mean (SD) age = 21.99 (3.30), mean BMI = 22.6 (3.07) completed questionnaires assessing media influence (interest, pressure and perception of media focus), internalization of the media ideal, appearance comparison, body dissatisfaction (muscularity and body fat), drive for thinness, and muscularity and disordered eating. Results: Structural equation modeling (SEM) analyses revealed that the hypothetical model was not a good fit to the data [ $\chi^2(17) = 55.5, p = .001, RMSEA = .118, CFI = .897$ ], however following the inclusion of 3 additional pathways, the final model was a good fit [ $\chi^2(14) = 22.96, p = .06, RMSEA = .06, CFI = .98$ ]. In the final model, media influence was directly related with thinness related variables and indirectly with muscularity related variables through internalization. Dissatisfaction with muscularity and dissatisfaction with body fat led, respectively, to drive for muscularity and drive for thinness. Drive for thinness and dissatisfaction with muscularity then led to disordered eating. Furthermore, the internalization of media ideals and appearance comparison were mediators in the model. Conclusions: Findings suggest the importance of considering gender-specific concerns and risks factors for body dissatisfaction and disordered eating and targeting these factors in prevention programs.

#### **Learning Objectives:**

- Describe media influences on male body image and disordered eating.
- Evaluate a dual-pathway model of media influence on body dissatisfaction and disordered eating in French undergraduate males.
- Recommend considering gender specific risk factors for body image and eating concerns.

#### **T19**

##### **Weight and Body Satisfaction in Relation to Romantic Relationship Constructs**

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When young women think about their bodies, they do not do so in a vacuum. Whether it be comparing one's body to others (e.g., peers) or thinking about one's body in terms of what potential partners find attractive, women arrive at their body image in a sociocultural context. In the current study, we examine the relation between weight and body satisfaction and the perceived importance of weight and body to potential romantic partners, and test whether level of perceived importance of weight/body to potential romantic partners interacts with relationship contingent self-worth to identify levels of weight/body dissatisfaction. Participants were 441 female college students at who completed an online survey of the Body Parts Satisfaction Scale, where they rated their satisfaction with various features of appearance including weight, arms, stomach, buttocks, hips, upper thighs, and general muscle tone. They also rated these same body parts in terms of how important they thought they were to potential romantic partners, and completed a measure of relationship contingent self-worth. Self-reported body (and weight) satisfaction was significantly negatively correlated with how important body (and weight) were perceived to potential romantic partners ( $r_s = -.15$  to  $-.20, p < .01$ ); the more the body (and weight) were perceived to be important to potential partners, the more dissatisfied women were about these aspects of themselves. Only the perceived importance of weight to partners interacted with relationship contingent self-worth to identify levels of weight dissatisfaction ( $t(434) = -2.14, p = .033$ ), but this interactive effect disappeared after controlling for BMI. Findings suggest that weight/body satisfaction is linked to the perceived importance of the body to potential romantic partners, but that BMI may trump the combined effect on body dissatisfaction of believing weight is important to potential partners and relying on relationships for a sense of self-worth.

#### **Learning Objectives:**

- Recognize how body satisfaction exists in a sociocultural context, including beliefs about what is important to potential romantic partners.
- Contrast satisfaction with one's body with the perceived importance one feels potential romantic partners place on the body.
- Summarize how the perceived importance of the body to potential romantic partners and relationship contingent self-worth interact, with and without controlling for body mass index, in relation to body satisfaction.

#### **T20**

##### **Preventing Eating Disorders and Obesity: Efficacy of the Selective Program 'Moon Project' Based on Protective Factors and Creativity**

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The first primary prevention selective programs have been developed since the Nineties for AN and BN. In the following years there was a debate in the literature on how to best integrate prevention of ED with prevention of obesity. In fact advice on what to eat to stay healthy may increase concerns about food and body image, as well as advice on physical

activity to remain 'fit' may lead some people develop an ED. The objectives of the research was to evaluate the efficacy of the original program 'MOON PROJECT' and to compare it with a shorter version. It integrates prevention for ED and obesity for improving self-esteem, body dissatisfaction, problem-solving skills and disturbed eating behavior. It was conducted in Lecce (Italy) in the years 2009-2010 on students aged 10-11. It provides: meetings with adults, teachers and parents, in order to provide parents and teachers tool for early detection of dysfunctional and at risk attitudes; meetings with children based on protective factors aiming to deepen knowledge and expression of self, implement critical thinking about media messages, implement relational skills, develop creativity and problem solving (with no explicit reference to eating disorders and obesity). The sample is characterized by 176 subjects aged 10-11 who were evaluated before the start of the program (T0), at the end (T1), one year after the end of the program (T2) with: CHEAT-26, BUT, RSE, PBI, and a questionnaire on dietary/movement habits and cultural consumptions developed by the authors. The data obtained were analyzed using SPSS in order to detect any significant correlations between the variables taken into account. Control group received a short version (2 sessions) of the program respect to the original longer version (4 sessions). Each version has shown to be effective in reducing at risk eating behaviors ( $p < 0,01$ ) at T1 and 2. Only original version has shown a significant improvement in body image and self-esteem ( $p < 0,01$ ) at T1 and at T2.

### **Learning Objectives:**

- How to organize and conduct a preventive program for eating disorders and obesity.
- How assess subject to evaluate those at risk.
- How evaluate the results of the preventive program.

### **T21**

#### **Prevalence of Body Dysmorphic Disorder and Muscle Dysmorphia amongst Entry Level Military Personnel**

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The purpose of our study was to determine the prevalence of Body Dysmorphic Disorder (BDD) and Muscle Dysmorphia (MD) amongst entry-level, active duty military personnel, and the relationship of risk for these conditions to eating disorder risk. We conducted a voluntary, anonymous survey of entry-level United States Army, Navy, and Air Force trainees undergoing orientation at Fort Sam Houston. The survey instrument was comprised of basic demographic items and the following, previously validated screening tools: the Dysmorphic Concern Questionnaire (DCQ), the Muscle Dysmorphia Symptom Questionnaire (MDSQ), and the Eating Attitudes Test 26 (EAT26). 1150 of 1329 eligible respondents completed the survey, for a response rate of 86.5%. Mean age of participants is 21.9 (SD of 4.1) and mean BMI is 24 (SD of 2.1). Males represented 65.6% and the Army 59% of the respondents. 15.7% of respondents screened positive for BDD, and 9.7% screened positive for MD. Respondents screening positive for BDD were more likely to also screen positive on the EAT-26 (40.6% vs. 8.9%,  $p = 0.001$ ). In contrast, a lower proportion of respondents at risk for MD had increased risk for eating disorder based on the EAT26 (17.6% vs. 8.5%,  $p = 0.001$ ). Of all respondents, 35.6% screened positive for eating disorder risk. Using more restrictive cutoff criteria (eliminating items about daily exercise and recent weight loss that would be very common in recent graduates of basic military training), this rate decreased to 13.8%. In summary, the prevalence of both BDD and MD in entry-level military personnel based on available screening tools exceeded that of the general population of the United States. Individuals screening positive for BDD but not MD were more likely to be at risk for an eating disorder. The prevalence of eating disorder based on EAT-26 score was also higher than expected, but approached the general population rate.

### **Learning Objectives:**

- Describe the prevalence and demographics of those at risk for Body Dysmorphic Disorder amongst entry-level, active duty military personnel.
- Describe the prevalence and demographics of those at risk for Muscle Dysmorphia amongst entry-level, active duty military personnel.
- Compare the results with those of the Eating Attitudes Test 26 to help determine associations.

### **T22**

#### **Psychometric Properties of the Body Appreciation Scale in College Men**

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Body appreciation is an aspect of positive body image that includes respect for and acceptance of one's body. This study evaluated the psychometric properties of the Body Appreciation Scale (BAS, Avalos, Tylka, & Wood-Barcalow, 2005), a measure of body appreciation that was originally developed and evaluated with women, in college men. The sample

consisted of 432 men (M age = 19.84±3.05). Convergent and divergent validity were investigated by examining the relation between BAS scores and measures of appearance evaluation, body mass index, disordered eating pathology, drive for muscularity, exercise dependence, male body attitudes, self-esteem, steroid use, and teasing. Results provided evidence of construct validity and internal consistency. Confirmatory factor analysis provided support for a unidimensional factor structure. Results suggest that the BAS is a useful tool for assessing body image in men.

**Learning Objectives:**

- Define the construct of 'body appreciation.
- Explain what the Body Appreciation Scale is, including information about its psychometric properties.
- Have a better understanding of variables that are linked to body appreciation in men, such as self-esteem and eating disordered behavior.

## **T23**

### **Trait-focused Transdiagnostic Internet-based Prevention of Common Mental Disorders in Students**

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Many university students experience symptoms of eating disorders, depression, anxiety disorders or substance use disorders. This study aimed to develop and evaluate a trait-focused internet-based prevention programme for these disorders in students. College students studying in London (N=1141) were targeted in a randomised controlled trial evaluating the efficacy of a trait-focused transdiagnostic internet-based cognitive-behavioral intervention, compared to a control intervention. This intervention included modules on perfectionism, low self-esteem, difficult emotions and anxiety. A placebo control intervention was developed as well as a system to deliver personalised computerised feedback. Students were classified as high or low risk according to their personality and assessed on symptoms of common mental disorders and general well-being. The trait-focused intervention reduced eating disorder symptoms, depression, anxiety and, to some extent, phobia-related avoidance in students at high risk. The findings suggest that: students at high risk for developing mental disorders can be identified according to their personality and their mental health can be improved with an intervention targeting personality risk factors.

#### **Learning Objectives:**

- Describe the comorbidity of eating disorder symptoms and symptoms of other common mental disorders in the student population.
- Illustrate the detection of students at high risk according to personality variables that have been established as risk factors.
- Evaluate the feasibility and efficacy of a transdiagnostic trait-focused internet-based prevention program targeting personality risk factors.

## **Children & Adolescents**

### **T24**

#### **Emotional and Instrumental Feeding Practices Prospectively Predict the Development of Emotional and External Eating Behaviors in 2-4 Year Old Children**

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Emotional and external eating are associated with eating disorders and overweight and obesity. However, prospective relationships have not been established and the early development of these behaviours is not understood. The purpose of this study was to investigate whether maternal emotional or external eating or emotional and instrumental child feeding practices prospectively predicted the development of emotional and external eating and body mass index (BMI) in pre-school children. Mothers of 2-4 year old children completed questionnaires at Time 1 (N = 183), 12-months later at Time 2 (N = 157) and 24-months later at Time 3 (N=138). Hierarchical multiple regression analyses revealed that Time 1 maternal emotional feeding predicted development of Time 2 and 3 child emotional eating after controlling for Time 1 child emotional eating. Time 1 maternal external eating prospectively predicted Time 2 and 3 child external eating and Time 2 maternal external eating predicted Time 3 child external eating but no child feeding practices predicted child external eating. No assessed variables predicted the development of child BMI. The finding that emotional feeding is a risk factor for the later development of emotional eating in young children could be used to inform public health interventions aimed at preventing the development of unhealthy eating patterns in childhood.

#### **Learning Objectives:**

- Understand emotional and instrumental child feeding practices.
- Assess the contribution of maternal eating behaviours and maternal child feeding practices to the development of child emotional and external eating.
- Consider the potential for public health interventions of addressing maternal eating behaviours and feeding practices.

### **T25**

#### **Adaptations of Cognitive Behavioral Therapy Enhanced for Younger Adolescents**

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Lock and LeGrange's Family-Based Therapy is currently the leading evidence-based treatment for children and adolescents with anorexia nervosa; however, is not effective in all cases. Implementation of Family-Based Therapy is difficult when there is a high conflict parental divorce or high levels of expressed emotion, and some patients do not progress to independent eating. Scant literature exists to guide the clinician on alternative treatments for younger adolescents. In our treatment center, we have been trained and supervised by Dr. Christopher Fairburn, the developer of Cognitive Behavioral Therapy Enhanced (CBT-E) for eating disorders. We have adapted this treatment for younger adolescents in cases where Family-Based Therapy has not been effective. We will describe our adaptations to CBT-E and present a case series. We will discuss and give examples of key therapeutic strategies including collaborative weighing, addressing over-evaluation of shape and weight, addressing mood intolerance, real time self-monitoring, problem solving, coping cards, and motivational strategies. We will also explain our approach to working with parents. CBT-E, modified for younger adolescents, showed a high level of acceptability by adolescents and parents, was cost effective, and achieved positive outcomes including weight gain and maintenance of a healthy body weight. Our experience suggests that modified CBT-E is a viable alternative when Family Based Therapy is not feasible or has not been effective.

### **Learning Objectives:**

- Provide a brief overview of the extant literature on treatment outcomes for anorexia in adolescents.
- Describe our adaptation of Cognitive-Behavior Therapy – Enhanced (CBT-E) for application in adolescents with anorexia: we will outline component therapeutic strategies for adolescents and parents and provide case examples.
- Present case series data that show high acceptability, cost effectiveness, and positive weight regain and maintenance using this intervention.

### **T26**

#### **Family Functioning in Two Treatments for Adolescent Anorexia Nervosa**

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The aim of the current study was to examine aspects of family structure, family organization, and family interactions in adolescents receiving treatment for anorexia nervosa (AN). Participants were parents of 120 adolescents with AN randomized to receive either Family-Based Treatment (FBT) or individually-based Adolescent-Focused Therapy (AFT). Family functioning was assessed at baseline, post-treatment, and 6- and 12-month follow-up with the Family Assessment Device (FAD). The FAD is a self-report instrument providing information on seven specific aspects of family functioning: Problem Solving, Communication, Roles, Affective Responsiveness, Affective Involvement, Behavior Control, and General Functioning. Several significant predictors of pretreatment family functioning were identified. Longer duration of illness and higher EDE-Global scores emerged as significant predictors of Communication impairment. Greater number of prior hospitalizations emerged as a significant predictor of Roles impairment. AN-Binge Eating/Purging subtype emerged as a significant predictor of impairments in Affective Involvement, Problem Solving, and General Functioning. An examination of changes in family functioning during treatment revealed an overall improvement in Affective Responsiveness between 6- and 12-month follow-up for all participants, regardless of treatment type. Further, results revealed a significant improvement in Roles for participants in FBT but not AFT at post-treatment and 6- and 12-month follow-up. Results from this study suggest that caregivers of adolescents seeking AN treatment may perceive impairments in family functioning that are impacted by the nature, length and severity of illness. However, family and individual treatment may have some positive impact on family functioning. Moreover, family-based treatment may be more effective in improving the division of roles and responsibilities within the family compared to a more individualized treatment.

### **Learning Objectives:**

- Describe aspects of family functioning as they relate to adolescent anorexia nervosa.
- Evaluate changes in family functioning during treatment for adolescent anorexia nervosa.
- Discuss the role of the family in treatment for adolescent anorexia nervosa.

### **T27**

#### **Importance of Compensatory Exercise in Female Adolescent Eating Disorder Patients**

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In previous studies, excessive exercise among eating disorder (ED) patients has been associated with more eating psychopathology, longer inpatient treatment as well as a shorter time to relapse. However, no studies have investigated this issue among adolescents. Objective: The present study aimed to compare adolescent female ED patients using excessive exercise with those that did not regarding age, BMI, ED symptoms, emotional symptoms, self image, and level of

functioning, as well as the significance of the frequency of exercise. Method: A sample of adolescent women (n=742) from the Stepwise database were separated into Restrictive Anorexia Nervosa (n=243), Binge/Purge Anorexia Nervosa (n=42), Bulimia Nervosa (n=124) and ED Not Otherwise Specified (examples 2, atypical anorexia n=189, and 4, purging disorder n=144) as well as excessive exercisers and non excessive exercisers. All variables were assessed using different self-report questionnaires along with semistructured interviews and clinical assessments by clinicians. Results: Restrictive patients used exercise least often. While was a tendency however for impact of exercise to be greets in restricting anorexia, regardless of diagnostic subgroup the excessive exercisers had significantly more self-reported ED symptoms, emotional symptoms, and lower self-esteem, often with more-than-large effect sizes. Clinicians however rated no differences in level of functioning, and BMI did not differ substantially. Correlations between exercise frequency and other variables were few and modest (and were found primarily in the EDNOS group). Conclusions: The findings suggest that adolescent ED patients who exercise have a significantly more severe clinical presentation and that the behavior is of greater importance in anorexia than in bulimia. Exercise frequency was found to be of importance only in the not otherwise specified subgroup. Further research is needed to replicate and validate these findings.

### **Learning Objectives:**

- Describe difficulties in measuring excessive exercise in research.
- Give examples of the impact of exercise on other ED symptoms.
- Consider the importance of exercise as a diagnostic criterion for ED.

**T28**  
**Emotional Processing in Young Patients with Anorexia Nervosa -Restricting Type After Weight Recovery**  
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The purpose of our study was to identify biomarkers of cognitive and affective dysfunction in Anorexia Nervosa restricting type. As biomarkers, event related brain potentials (ERPs) may reflect endophenotypes of AN, informing treatment development & focusing pharmacological research. In this study, we evaluated the late positive potential (LPP) and P300 markers of neural processing during affective and cognitive categorization tasks in 7 weight recovered patients (WRAN) and 7 normal controls (NC). In separate tasks, participants were asked to categorize 2 types of affective stimuli along the pleasant/unpleasant dimension – facial expressions and nonfacial stimuli (e.g., playful puppies, dirty toilets, etc., drawn from the International Affective Picture System). A cognitive P300 target categorization task, matched in complexity to the LPP task, was used to control for differences in cognitive processing. The results revealed a robust main effect for the cognitive P300 amplitude (Targets > Context), but groups did not differ at parietal sites. Similar results were observed when affective targets were unpleasant stimuli in a pleasant context; LPP amplitude was larger to unpleasant targets than to context stimuli across both groups, and for facial & nonfacial stimuli. However when targets were pleasant stimuli in an unpleasant context, WRANs showed greater responses to the targets over left parietal sites relative to NCs, an effect that was more robust for nonfacial stimuli than for faces. The LPP is thought to be related to a perceptual sensitivity to the motivational relevance of visual scenes, and may represent the output of reentrant connections from the amygdala. This reentrant connection is thought to recruit wider neural resources for more intensive processing of motivationally relevant images. These data suggest WRAN's neural systems may be more sensitive to certain classes of positive hedonic cues than normal controls.

### **Learning Objectives:**

- Identify and evaluate the role of Evoked response potential(ERP) as a trait bio marker for patients with anorexia nervosa restricting type after weight recovery.
- Identify and evaluate cognitive and affective differences between recovered Anorexia Nervosa restricting type patients and normal controls.
- Modify existing knowledge about hedonic processing in weight recovered patients with Anorexia nervosa-restricting type compared to normal controls.

**T29**  
**An Intensive Outpatient Program that Integrates Dialectical Behavior Therapy and Family Based Treatment for Adolescents with Complex Eating Disorder Presentations**  
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The purpose of this presentation is to introduce an intensive outpatient program (IOP) treatment model that blends Dialectical Behavior Therapy (DBT) and Family Based Treatment (FBT) in a tertiary care treatment facility. The IOP was designed for adolescents with eating disorders that also present with emotional processing/affect regulation difficulties, suicidal/self-injurious behaviors, and/or psychiatric comorbidities that have led to decreased responsiveness to FBT alone. The IOP blends standard aspects of DBT (e.g. skills training groups, individual/family therapy, telephone skills coaching, consultation team, etc.) with traditional FBT interventions (e.g. empowering parents to assume a leading, active role in refeeding their child) in an IOP structure that enhances accountability and support. The presentation will include a case description demonstrating how this model worked for a 17-year-old female and her family. Outcome data for this adolescent suggests the model was effective as indicated by clinically significant and reliable change calculated using Reliable Change Index Score statistical analyses for a variety of target symptoms (e.g. eating, mood, emotion regulation, etc.). Results from the satisfaction survey suggest that the IOP program was well-received and feasible for the participant and her family.

#### **Learning Objectives:**

- Describe the structure and format of an intensive outpatient program designed for adolescents with eating disorders and emotion regulation difficulties.
- Identify adolescents that may benefit from a DBT/FBT treatment model.
- Utilize strategies to incorporate DBT into an intensive outpatient program.

### **T30 Transdiagnostic Response to Family-Based Treatment for Eating Disorders in Adolescents: Predictors of Outcome**

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Objective: Family-Based Treatment (FBT) is an evidenced based treatment for adolescents with Anorexia Nervosa (AN); however, how effective it is with the broad spectrum of eating disorders (EDs) in adolescents is unknown. The current study examines the transdiagnostic response of adolescents with EDs to FBT and explores baseline predictors of outcome. Method: Data for this study is from participants (N=56) from two randomized clinical trials (RCTs) employing FBT that included adolescents (ages 12-19) who met full DSM-IV AN criteria, partial AN (exclusion of the amenorrhea requirement), full DSM-IV Bulimia Nervosa (BN) criteria, and partial BN (binge-purge minimum frequency of one time per week and a total of at least 24 episodes over six months). Eating-related psychopathology was assessed at baseline and end of treatment using the Eating Disorder Examination (EDE). The primary categorical outcome was recovery (yes/no), defined as a global EDE score within 1SD of community norms, weight > 95% of expected mean percentile BMI for age/height/gender, and the absence of binge-eating and purging. This definition of recovery was modified from the original RCTs to encompass symptoms across ED diagnoses. The secondary outcome measures were changes in the variables of weight, global EDE score, and binge-eating and purging. Results: Participants with full or partial AN who received FBT achieved higher rates of recovery than participants with full or partial BN. The presence of co-morbid mental illness, longer illness duration, higher global EDE scores, and more binge-eating or purging episodes at baseline predicted not achieving recovery for all participants. Participants in the AN group were also more likely to achieve significant improvements on continuous variables. Conclusion: Although FBT is effective for both AN and BN disorders, these results suggest that FBT is more effective for purely restrictive disorders than for those with binge-eating and purging behaviors.

#### **Learning Objectives:**

- Describe the transdiagnostic application of family-based treatment for adolescents with eating disorders.
- Identify the transdiagnostic response of adolescents with a broad range of eating disorders to family-based treatment.
- Identify transdiagnostic, baseline predictors of categorical and continuous outcome at end of treatment for adolescents who received family-based treatment.

### **T31 Exploring the Co-morbidity of ADHD and Disordered Eating Behaviors among a Nationally Representative sample of U.S. Adults**

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Emerging evidence signifies the co-morbidity of Attention Deficit/Hyperactivity Disorder (ADHD) and eating disorders. However, limited research currently exists regarding: a) the prevalence of this co-occurrence in non-clinical populations; b) the association between ADHD and disordered eating behaviors; and c) the extent of this co-occurrence among males.

Subsequently, the purpose of this study was to examine the co-morbidity of ADHD, eating disorders, and disordered behaviors in a nationally representative sample of male and female adults in the U.S. Data obtained from the National Longitudinal Study of Adolescent Health (n=4,853) were used for the current study. Multivariate logit models were utilized to determine if ADHD predicted eating disorders and disordered eating behaviors when controlling for race-ethnicity and age. The sample included 51% males and 49% females with the majority identified as White (67%) followed by 16% African-American or Black, 8% Hispanic, and 4% Asian. Results revealed no statistically significant difference ( $p > .1$ ) in the rate of co-occurring ADHD and eating disorders between males (4.59%) and females (4.92%). Both males and females with ADHD had a significantly higher rates of engaging in any disordered eating behavior than those without ADHD (19.32% vs. 11.22%,  $p < .001$ ; 35.38% vs. 24.06%,  $p < .001$ , respectively). When controlling for age and race, ADHD strongly predicted the occurrence of disordered eating behaviors for both males (OR: 1.87, 95% CI: 1.34-2.60) and females (OR: 1.73, 95% CI: 1.30-2.29). However, ADHD was not predictive of restrictive eating behaviors for either males or females ( $p > .1$ ). Current findings provide additional evidence of the co-occurrence of ADHD, eating disorders, and disordered eating behaviors among a non-clinical sample of male and females. Implications include monitoring both male and female children and adolescents with ADHD for disordered eating behaviors.

#### **Learning Objectives:**

- Describe the co-occurrence of ADHD and eating behaviors.
- Identify differences in the co-occurrence of ADHD and disordered eating behaviors between types of behaviors.
- Discuss multi-disciplinary implications regarding disordered eating behaviors among children and adolescents with ADHD.

### **T32 Fear of Weight Gain in Adolescents with Anorexia Nervosa Spectrum Disorder: Do Behavioral Indicators Enhance Symptom Identification?**

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Fear of weight gain is a cardinal diagnostic feature of anorexia nervosa. While typically assessed through self-report of the psychological state, DSM-5 is moving towards a more behavioral conceptualization of this symptom. The current study examined whether the assessment of behavioral indicators increased identification of fear of weight gain in a cohort of 60 adolescents with anorexia nervosa spectrum presentation, via interviews with their parents. A new version of the Eating Disorders Examination (EDE; Fairburn, Cooper & O'Connor, 2008) that queries parents about the eating disorder symptoms and diagnostic features of their offspring (P-EDE) was used. Results showed that the allowance of behavioral indicators significantly increased identification of fear of weight gain ( $t(48) = -5.99, p < .01$ ). Chi square analysis revealed ratings with behavioral indicators were more likely to reach the diagnostic cutoff for anorexia nervosa than those without behavioral indicators ( $\chi^2(1, N = 49) = 3.71, p = .05$ ). Correspondingly, agreement between the two methods as measured by Cohen's Kappa was poor ( $K = .18$ ). The behaviors most frequently endorsed were refusing attempts to increase weight by passive resistance (i.e. simply refusing to eat) (65%,  $n = 39$ ) and yelling (32%,  $n = 19$ ). These findings suggest that using parent-observed symptom indicators may aid in recognition of fear of weight gain, lending support to the changes proposed for DSM-5.

#### **Learning Objectives:**

- Describe the conceptual changes to the fear of weight gain diagnostic feature in DSM-5.
- Discuss common parent-observed behaviors indicating fear of weight gain in adolescents.
- Examine the implications inclusion of behavioral indicators may have on symptom identification.

### **T33 Gender-Differences in Coping Style and Emotional Wellbeing Among Parents of Adolescent with an Early-Onset of the Eating Disorders**

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The aim of the study is to examine the coping style and its relation to the emotional wellbeing among parents of adolescents with eating disorders(ED), comparing by gender. A total of 109 mothers and 109 fathers completed the following scales: Scale coping styles (COPE, Carver et al., 1989, Crespo et al. 2004), with 60 items and 14 coping styles. The STAI scale (Spilberger, 1970; TEA, 1986) and (BDI, Beck et al., 1961, Vázquez and Sanz, 1991) were used to assess levels

of anxiety and depression of the parents. Paired comparisons were performed with Chi-square test and Student t test. A total of 109 mothers, with a mean age of 45.8 (SD = 4.1), and 109 fathers, with a mean age of 48.5 (SD = 5) of a total sample of 109 female patients. The mean age of the patients was 14.5 (SD = 1.35). Their body mass index was 16.2 (SD = 1.8, range = 12.4 to 20.9). 80% of patients had been admitted for treatment with a BMI under 17.5. Coping styles that were used more frequently by the mothers was active coping while planning was more frequently used by the fathers. There were significant differences between both parents ( $p > 0.05$ ). Among the styles less used by both parents were substance use and humour. The mean score of the mothers' anxiety-state was 28.9 (SD = 10.7), while anxiety-trait was 20.7 (SD = 9.4). 21.3% of mothers were above the 99th percentile for anxiety-state and 8% were above the 99th percentile trait-anxiety. The mean score for anxiety-state of the fathers was 21.5 (SD = 9.5), whereas the anxiety-trait was 16 (SD = 7.3). 10.7% were above the 99th percentile for anxiety-state and 2.4% were above the 99th percentile for anxiety-trait respectively. Mothers that present high levels of anxiety and depression most commonly used the suppression of distracting activities and denial as coping strategies to food problems, while fathers tended to use behavioural disengagement in the same context.

#### **Learning Objectives:**

- Understand the type of coping style of the parents in eating disorder at the onset of the illness.
- How this coping style may influence in the emotional wellbeing of the parents.
- Cover communication and understanding deficits about the illness leading to improve home care and outcome treatment.

### **T34**

#### **Sports and Eating Disordered Behavior**

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The purpose of this study is to examine the effect of gender and sport (individual versus team) on measures of body image disturbance, eating pathology, and attitudes towards extreme weight control behavior. During physical education classes and science research classes, 92 athletes and non-athletes at a suburban high school were given an anonymous survey that included the Muscle Dysmorphic Disorder Inventory (MDDI), the Eating Disorder Examination Questionnaire (EDE-Q), and an additional 7 questions about extreme dieting/muscle building behaviors. There were 67 females and 25 males; their ages ranged from 14 to 18 with a mean of 15.67 and the mean BMI was 21.23 (SD = 3.40). We examined the main effects of gender and type of sport (individual versus group) and their interaction using ANCOVA controlling for the effects of age. Females scored significantly higher than males on the shape concern subscale of the EDE-Q,  $F(1) = .443$ ,  $p = 0.013$ . Females reported significantly more dietary restraint,  $F(1) = 8.568$ ,  $p = 0.004$ . Participants in individual sports scored significantly higher on the MDDI drive for size subscale than those in group sports,  $F(3) = 5.959$ ,  $p = 0.001$ . There was a significant interaction of gender x sport on the use of fasting,  $F(1) = 4.084$ ,  $p = 0.009$ . These results show females are more concerned about their bodies shape and more likely to fast in individual sports and that those in individual sport were more likely to desire larger muscles and bodies. These results can be used to help better target prevention for athletes and create sport specific modules for prevention programs based on specific risk.

#### **Learning Objectives:**

- Assess the role of sport (individual versus group) in disordered eating.
- Describe differences between genders in adolescent disordered eating.
- Examine and target prevention for athletes and create sport specific modules for prevention programs based on specific risk.

### **T35**

#### **Dieting and Peer Stigmatization: A Longitudinal Study**

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Dieting is considered a risk factor for Eating Disorders and recent data suggests that it is reported by one in ten children aged between 9 and 12 years. The aim of the present study is to examine whether baseline measures of stigmatization, body image, and body mass index (BMI) can predict subsequent dieting behaviours in children. Two hundred forty-seven 8 to 12 years-old children completed questionnaires on their eating habits, their body image as well as on stigmatization on two different occasions, one year apart. Objective measures of their height and weight were obtained. A logistic regression analysis was performed to predict dieting based on different predictors: body image, BMI, general peer stigmatization as well as weight and appearance stigmatization. The resulting model explains 29% of the variance of dieting, indicating that children with higher BMI ( $p = 0.03$ ) who are stigmatized for their weight ( $p = 0.04$ ) are more likely to be part of the dieting group, odds ratios are respectively 1.25 and 0.23. All other variables included did not contribute significantly to the model. Chi-square analysis shows that children who are dieting are significantly more likely to adopt dysfunctional eating behaviors, such as vomiting after eating and exercising excessively ( $p = 0.003$ ). The results indicate

that not only children's weight but also the degree to which they are teased about their weight play an active role in their decision to go on a diet in order to lose weight. Unfortunately, such decision can bring about other problematic eating behaviours, potentially harmful to children's physical and mental health.

### **Learning Objectives:**

- Recognize children's problematic eating behaviours.
- Better understand risk factors involved in the onset of dieting behaviours in children.
- Consider the deleterious effects of dieting behaviours in children.

## **Comorbidity**

### **T36**

#### **The Influence of Social Anxiety on Body Checking Behaviors in Female College Students**

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Although social anxiety and eating pathology frequently co-occur, limited research has examined the nature of this relationship using causal modeling. One existing study (Haase, Mountford, & Waller, 2007) found that social physique anxiety mediated the relationship between beliefs about the utility of body checking (e.g., it provides an objective verification of body size) and engaging in body checking behavior. To elaborate on this research, this study tested: (1) the fit of this foundational model in an independent sample of college women; and (2) the fit of an expanded model that includes the additional constructs of social appearance anxiety, trait eating pathology, and clinical impairment. Data from an ethnically diverse sample of college women without eating disorders (N = 286) confirmed that social physique anxiety partially mediated the relationship between body checking cognitions and body checking behaviors, such that the relationship was stronger in women with high social physique anxiety. Furthermore, structural equation modeling indicated adequate fit (CFI = .90; RMSEA = .06) for the proposed expanded model, indicating that both social physique and social appearance anxiety influence the expression of body checking behaviors. Overall, results suggest that the presence of various forms of social anxiety strengthens the relationship between body checking cognitions and behaviors and that body checking behaviors may result in functional impairment. Thus, assessing social appearance anxiety and social physique anxiety simultaneously may be important for conceptualizing the precipitating and maintaining factors, and consequences, of disordered eating.

### **Learning Objectives:**

- Describe a foundational theory that proposes how social physique anxiety may be related to the expression of body checking behaviors.
- Explain how additional constructs (i.e., alternate forms of social anxiety; global disordered eating) may influence this mediational relationship.
- Summarize how the relationship between body checking beliefs and body checking behaviors is influenced by two forms of social anxiety.

### **T37**

#### **Do Adolescents Receiving Family based Therapy (FBT) for an Eating Disorder Benefit as Much as Other Adolescent Patients from Group Treatment for Comorbid Social Anxiety?**

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Comorbid anxiety disorders are common in patients struggling with an eating disorder. Research shows that anxiety symptoms often precede the onset of eating disorders and have a prevalence rate that is significantly higher than for other types of primary presenting concerns. However, few studies have examined whether adolescents with an eating disorder benefit as much as other youth from group treatment for comorbid anxiety, especially while they are receiving concurrent treatment for the eating disorder. The present study examined adolescents' levels of anxiety symptoms following participation in a 10 session cognitive-behavioural based group treatment program for social anxiety. Participants were 30 adolescents (28 girls; 2 boys) who were referred for group treatment. 21 youth were referred from a tertiary level Pediatric Eating Disorders program where they were receiving concurrent family based therapy (FBT) for a primary diagnosis of an eating disorder, and 9 adolescents were referred from an Adolescent Medicine Program where their primary diagnosis was a General Medical Condition. Adolescents completed pre- and post treatment measures including; a demographic questionnaire and the Multidimensional Scale of Childhood Anxiety (MASC; March, 1997). Results showed that adolescents with an eating disorder did not experience a decrease in their anxiety symptoms over the course of the group treatment. In fact, adolescents' symptoms of separation/panic significantly increased. Patients from the Adolescent Medicine Program experienced significant decreases in the domains of social anxiety and in their overall level of anxiety post group. Taken together, it is likely important for clinicians to consider the Phase of treatment in FBT when referring

adolescents with an eating disorder for group treatment of comorbid social anxiety, and the value in waiting until patients have reached Phase 3 of this treatment.

### **Learning Objectives:**

- Provide a brief overview of the literature on comorbid anxiety disorders in adolescents with a primary diagnosis of an eating disorder and describe the cognitive behavior therapy group for social anxiety.
- Discuss changes in anxiety symptoms over the course of the group for adolescents with a primary diagnosis of an eating disorder who were receiving concurrent FBT versus patients with a primary diagnosis of a General Medical Condition.
- Reflect on the clinical implications of these findings for providing group treatment for comorbid anxiety disorders to adolescents who are receiving FBT and highlight the importance of considering the Phase of FBT.

### **T38**

#### **Bulimic Behaviors and Early Alcohol Use: Findings from a Cotwin-Control Study of European- and African-American Women**

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This study evaluated the association between bulimic behaviors and early alcohol use (EAU), after controlling for the effects of familial risk factors. Participants included 3208 European-American (EA) and 548 African-American (AA) young adult women from the Missouri Adolescent Female Twin Study. A telephone adaptation of the Semi-Structured Assessment for the Genetics of Alcoholism interview assessed DSM-IV binge eating, purging, and alcohol use. Lifetime bulimic behaviors (0=no behaviors, 1=binge eating and/or purging) were examined in twin pairs concordant and discordant for EAU (before age 14). The purging assessment was not contingent on endorsement of binge eating. Logistic regressions controlling for zygosity, age, body mass index, and early menarche (before age 12) were stratified by ethnicity and adjusted for non-independence in the twin data. Women who engaged in bulimic behaviors were more likely to report EAU compared with women who did not (EAs: Odds Ratio=2.00 [95% Confidence Interval=1.50-2.67]; AAs: 2.77 [1.39-5.53]). Among EAs, members of pairs where both twins were early drinkers (concordant affected) were 2.46 (1.50-4.06) times more likely to endorse bulimic behaviors compared with members of pairs where neither cotwin was an early drinker (concordant unaffected). EAU twins from discordant pairs (high-risk discordant twins) were 1.73 (1.19-2.52) times more likely to engage in bulimic behaviors than concordant unaffected twins. Among AAs, concordant affected twins and high-risk discordant twins were 4.24 (1.20-15.03) and 2.78 (1.16-6.67) times more likely to endorse bulimic behaviors than concordant unaffected twins, respectively. There were no differences between twins from discordant pairs who did not report EAU (low-risk discordant twins) and concordant unaffected twins among EAs or AAs. Findings suggest that bulimic behaviors are increased among EAs and AAs who report EAU, even after accounting for familial risk factors.

### **Learning Objectives:**

- Identify the importance of examining the comorbidity between eating disorder symptoms and alcohol use in African-American women.
- Describe the benefits of using a cotwin-control design for research.
- Recommend future directions for investigating the association between eating disorder symptoms and co-occurring behaviors using genetically informative samples.

### **T39**

#### **Eating Disorders and Associated Comorbidities among Female Veterans**

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The purpose of this study was to examine eating disorders (EDs) and related comorbidities among female veterans. EDs remain understudied among veterans, possibly due to perceptions that this primarily male population does not suffer from these disorders. However, unprecedented numbers of female veterans are returning from the current Iraqi and Afghanistan conflicts. High rates of posttraumatic stress disorder (PTSD), depression, and obesity observed among both male and female veterans may make this group vulnerable to the onset of disordered eating. The current study utilized chart review methodology to obtain data from 235 female veterans who presented to the women's primary care clinic at a large, urban VA medical center between 2007 and 2009. A total of 3.8% previously had been diagnosed with any ED, primarily ED not otherwise specified (EDNOS). In bivariate analyses, presence of PTSD was associated with having an ED diagnosis ( $p = .046$ ); presence of major depressive disorder (MDD) was marginally significant ( $p = .06$ ). However, when these two disorders were included in a multivariate model including age, race, smoking status, and BMI, only BMI (OR =

.85,  $p = .03$ ) was uniquely associated with EDs; MDD (OR = 5.42,  $p = .07$ ) and age (OR = .94,  $p = .06$ ) were marginally significantly related to ED status. In sum, the rate of EDs in this sample is comparable to prevalence estimates of EDNOS in the general population. However, EDs may be under-diagnosed among in this population. Current findings underscore the importance of assessing for EDs among VA patients and the need for further research among both male and female veterans.

#### **Learning Objectives:**

- To recognize that eating disorders are a significant problem among female veterans.
- To examine conditions comorbid with eating disorders among female veterans.
- To discuss potential risk factors for eating disorders among female veterans.

#### **T40**

##### **Impulsivity, Comorbidity and Risk of Suicide in Eating Disordered Patients**

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For many years suicide has been considered the leading cause of death in AN. However, some recent studies (Kaye, 2009) show that the suicide rate would be as high as in BN and EDNOS and would be correlated with the presence of psychiatric comorbidity (mood disorders, anxiety and substance abuse). Familiarize with the risk of suicide as a possibility in all ED subjects could improve prevention strategies regarding suicidal behavior. The author has conducted a research in the years 2010 and 2011 to evaluate risk of suicide in a sample consisted of 82 subjects who were consecutively assessed at Center for Treatment and Research on Eating Disorders. Among them 12,20% had Anorexia R, 7,32% Anorexia B/P, 45,12% Bulimia, 10,98% EDNOS, 24,39% BED (DSM IV TR); mean age was 25,98 years; mean duration of illness was 9,59 years. All subjects were analyzed to determine in addition to the characteristics of eating disorder, presence of impulsivity, suicidal ideation, personality characteristics, presence of psychiatric comorbidity, attitudes toward body, self-esteem, physical and psychological violence in childhood and sexual abuse (EDI-2, BITE, BUT, BDI, SCL 90 R, PCC, SEI, BIS 11, DIS.Q, etc.). Data were analyzed using SPSS in order to detect any significant correlations between the variables taken into account. Psychiatric comorbidity was present in 84,15% (51,22% mood disorders; 20,74% anxiety disorders; 10,98% personality disorders; 1,22% substance abuse disorders). Impulsivity was present in 47,56%; anhedonia in 82,93%; hopelessness in 67,07%; suicidal ideation in 39%. Suicidal ideation was significantly correlate with impulsivity, depression, hopelessness, anhedonia and more eating and body disturbances. Is therefore important to always evaluate the severity of eating specific and not symptomatology, the presence of psychiatric comorbidities, as well as the presence of impulsivity. This allows you to develop more effective treatment programs to prevent suicidal behavior.

#### **Learning Objectives:**

- How evaluate presence of impulsivity, comorbidity and suicidal ideation in eating disordered patients.
- How assess risk of suicide.
- How develop more effective treatment programs to prevent suicidal behavior.

#### **T41**

##### **Personality disorders in Eating Disorder NOS (EDNOS) and Binge Eating Disorder (BED): A Meta-analysis of Comorbidity Studies**

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A meta-analysis was conducted to identify the proportion of comorbid personality disorders (PDs) in patients with Eating Disorder Not Otherwise Specified (EDNOS) and Binge Eating Disorder (BED). A search identified 21 papers in the period 1987--2010. The comorbidity profiles for EDNOS and BED were highly similar. The proportions for any PD were .37 and .29 for EDNOS and BED, respectively, for cluster C PDs .36 and .30, cluster B PDs .22 and .11, respectively. On the diagnostic level the most frequent disorders were avoidant PD (.20 and .11), borderline (.11 and .10) and obsessive-compulsive PD, both .10, respectively. The variance in any PD comorbidity was wider for EDNOS than for BED, suggesting a more clinical heterogeneity. Still, the underlying PD pathology in EDNOS and BED thus appears similar, and, as this pattern converges with findings on anorexia nervosa and bulimia nervosa yet with lower proportions, also similar to eating disorders in general. Few moderators were significant, except interviews yielding lower estimates than questionnaires. There was partly support of BED as a distinct eating disorder category, and of EDNOS as a potentially more severe condition than BED.

#### **Learning Objectives:**

- Understand challenges related to the comorbidity of eating disorders and personality disorders.
- Understand the fundamentals of meta-analysis.
- Understand the implications of the present findings for treatment of eating disorders and for future research.

## **T42**

### **Inappropriate Compensatory Behaviors among African- and European-American Male Adolescents and Young Adults**

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The objective of this study was to characterize inappropriate compensatory behaviors (ICB) in a population-based sample of male adolescents and young adults. Data from 318 European American (EA) and 400 African American (AA) male offspring from 532 families at high risk for substance use problems due to paternal alcohol problems and 235 low risk families were analyzed (median age 17.65). Lifetime eating disorder symptoms, other DSM-IV psychiatric disorders, substance use, and suicidality were assessed using an adaptation of the Semi-Structured Assessment for the Genetics of Alcoholism. Individuals who endorsed purging behaviors (with and without non-purging behaviors;  $n=26$ ; 3.63%) and non-purging behaviors only ( $n=158$ ; 22.07%) were compared to those with no history of ICB using chi-squared tests with p-values adjusted for familial clustering. Among purgers, vomiting was the most frequently endorsed purging behavior (57.69%), followed by laxative (26.92%) and diuretic use (23.08%); however, excessive exercise was the most commonly endorsed ICB among both purgers (65.38%) and non-purgers (84.81%). Purgers were more likely to have histories of alcohol use disorder and nicotine dependence compared to nonpurgers and those who did not report ICB ( $p<.001$ ). Men who had engaged in any form of ICB were significantly more likely to be AA ( $p<.0001$ ) and to express weight concern ( $p<.0001$ ) compared to those who had not. There were no significant between-group differences in the prevalence of binge eating (34.62% for purgers, 37.34% for nonpurgers and 29.78% for no compensatory behaviors), or any other variables assessed. These findings suggest that in male adolescents and young adults the prevalence of ICB may vary between EAs and AAs, and that these behaviors are associated with substance use disorders. Future studies in larger, ethnically diverse male samples are needed to further explore associations between ICB and substance use disorders in men.

#### **Learning Objectives:**

- Describe rates of inappropriate compensatory behaviors in an ethnically diverse sample of male adolescents and young adults.
- Recognize that there may be differences in compensatory behaviors between African-American and European-American men.
- Recommend future research for epidemiological studies of eating disorders and their symptoms.

## **T43**

### **Cardiac Abnormalities in Adolescent Males with Anorexia Nervosa**

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The purpose of the study was to evaluate changes in the heart of adolescent males with anorexia nervosa restrictive subtype. Echocardiographic studies were performed in 40 male patients with the diagnosis of anorexia nervosa restrictive subtype (ANR), with ages ranging from 9.3 to 20.9 years ( $15.2 \pm 2.3$ ; mean  $\pm$  s.d.). All of them with body mass index (BMI) below 19 ( $16 \pm 1.7$  kg/m<sup>2</sup>). A control group of 40 healthy adolescent males of same age (10.1 to 19.6 years;  $14.7 \pm 2.1$  years), and normal BMI ( $20.8 \pm 2.3$  kg/m<sup>2</sup>) was also studied. M-mode, and Colour-Doppler-Echocardiography were performed in all cases. Left ventricular mass (LVM) and LVM normalized by body surface area (BSA) was calculated. Mitral E and A inflow waves, and also E/A ratio were analyzed for each patient. Left ventricular function was also calculated for each case. Findings were analyzed looking for statistical differences with the control group. Results showed that in ANR males, LVM and LVM/BSA were diminished compared to the control group ( $p<0.001$ ). Also, diastolic E and A waves were abnormally low ( $p<0.005$ ), with and increased E/A ratio compared to controls ( $p<0.01$ ). The left ventricular function remained within normal limits in both groups. It is concluded that in males with ANR, there is an abnormal decrease of left ventricular cardiac mass, with an alteration in the diastolic filling pattern, but without significant changes on left ventricular function. These changes are similar to those present in females with ANR. These abnormalities should be followed up along the clinical course of the patient in order to evaluate the severity of the process.

#### **Learning Objectives:**

- Describe cardiac abnormalities in adolescent males with anorexia nervosa.
- Heart is part of the comorbid process in anorexia nervosa.
- Understand that cardiac size and mass is a relevant parameter in the evaluation of patients with anorexia nervosa.

## T44

### **Eating Disorder Symptoms in Those Who Engage in Non-Suicidal Self-Injury: Prevalence and Interpersonal Profiles**

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Eating disorders (ED) and non-suicidal self-injury (NSSI) behaviors frequently co-occur in both community and psychiatric populations (Wright, Bewick, Barkham, House & Hill, 2009; Herpertz, 1995). Much of the existing research has investigated psychiatric problems associated with NSSI behaviors in ED populations, with little attention paid to the co-occurrence of ED symptoms and NSSI in community samples, or the interpersonal problems that may characterize this population. Thus, the purpose of this study is to determine (1) the prevalence of ED symptoms in an online sample of self-injurers, and whether those who do and do not report ED symptoms differ in terms of (2) self-harm (SH) severity, as defined by frequency and methods of SH, and (3) interpersonal styles. Participants recruited from online SH social networking forums (n=116) completed the Eating Disorder Diagnostic Scale (EDDS), Inventory of Interpersonal Problems-64 (IIP-64), Personality Assessment Inventory-Borderline (PAI-BOR) and Questionnaire for Non-Suicidal Self-Injury (QNSSI). Participants were categorized as belonging to either the ED + NSSI group (i.e., met EDDS criteria for at least one threshold or subthreshold ED; n = 42 [36.2%]; AN = 11, BN= 31), or NSSI only group (i.e., did not endorse any ED symptoms; n=74). Compared to the NSSI only group, those in the ED + NSSI group endorsed using more methods of SH (QNSSI,  $t= 1.96$ ,  $p < 0.05$ ), reported more interpersonal problems (IIP-64,  $t=2.190$ ,  $p<0.04$ ; PAI-BOR Interpersonal scale,  $t=2.05$ ,  $p<0.04$ ), and exhibited a colder interpersonal style (IIP-64,  $t=2.29$ ,  $p<0.03$ ). These findings suggest that ED symptoms are common within an online SH population. Further research on treatment outcomes of ED + NSSI patients also deserves consideration, as greater methods of SH is considered an index of clinical severity (Claes, Vandereycken & Vertommen, 2003), and a cold interpersonal style is associated with poor treatment outcome within ED populations.

#### **Learning Objectives:**

- Describe the prevalence of eating disorder symptoms in a sample of participants who engage in non-suicidal self-injury.
- Compare the severity of self-harm behaviours between those who do or do not endorse eating disorder symptoms amongst a sample of self-injurers.
- Compare the interpersonal problems and styles between those who do or do not endorse eating disorder symptoms amongst a sample of self-injurers.

### **Course and Consequences of Eating Disorders**

## T45

### **Growth Trajectories of Maintenance Variables Related to Refractory Eating Disorders in Youth**

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Eating disorders (EDs) rank as the third most common chronic illness among adolescent females, and high rates of relapse and chronicity are often seen. In spite of decades of ED research, longitudinal studies of factors associated with refractory EDs, defined as requiring a return to same-type treatment, are still lacking. The objective of the current study was to investigate longitudinally, the role of maintenance variables found in Fairburn et al's., model (2003) for their effect on refractory EDs in youth. Participants in this study consisted of 305 adolescents with a moderate to severe ED, who underwent intensive specialized treatment. Growth trajectories of data collected during the initial intake assessment, at pre- and post-treatment and at six month and one year follow-ups were explored. Hierarchical linear modeling (HLM) was used to explore growth trajectories of the maintenance summary factor. Results of the HLM revealed that a significant cubic growth pattern exists when examining the summary maintenance factor over time, wherein there is a slight increase in symptoms while waiting for treatment to begin, then a decline in symptoms with treatment, followed by a slight rebound of symptoms during follow-up. These findings suggests that intensive specialized paediatric ED treatments are successful at decreasing those factors thought to be involved in maintaining an ED, although the lasting benefits of this treatment on the maintenance factors are still not clear. Findings confirm that significant growth curves of maintenance factors exist for youth with EDs, although much further work is still needed to understand the underlying mechanisms of the maintenance factors and their effect on refractory EDs.

#### **Learning Objectives:**

- Discuss refractory eating disorders in youth and the factors thought to maintain these disorders.
- Describe the growth trajectories of the maintenance factors across treatment and follow-up periods.

- Explore predictors of the maintenance factor growth curves.

#### T46

### **Excessive Exercise in Eating Disorders: Objective Assessment and Emotional States Connected to Physical Activity in a Sample of Hospitalized Patients**

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Excessive exercise is particularly spread among eating disordered patients but it's difficult to define, assess, understand and treat. Aims of the study were to evaluate, in a sample of subjects suffering from ED and receiving a multidisciplinary inpatient treatment: 1) the objective quantity of physical activity assessed through a specific apparatus; 2) the psychopathology of patients mostly affected by excessive exercise; 3) the possible role of physical activity in emotion regulation. We studied 273 patients consecutively admitted in a specialized unit for ED treatment (94 ANR, 60 ANB, 77 BN, 31 BED, 11 EDNOS) at admission and discharge. The objective level of exercise was assessed through the employment of Armband, a specific device that counts the number of steps done. The subjects were also administered self-report questionnaires to assess the general (SCID II, TAS-20, SCL 90R, BIS 11, Padua Inventory, BDI) and specific (EDI II, BUT) psychopathology, and a checklist developed to investigate emotions before, during and after physical activity. The patients that present a higher level of physical activity have: a) more severe general psychopathology (all SCL-90 subscales and in particular obsessive-compulsive, interpersonal sensitivity, depression, anxiety); b) higher level of obsession (Padua Inventory); c) lower impulsivity (EDI II e BIS 11); d) higher social insecurity and inadequacy (EDI II); e) higher perfectionism (EDI II); f) more intense body distress (BUT). The results of our study support previous findings suggesting that exercise seems to play an important role in the management of negative affects.

#### **Learning Objectives:**

- Assess the role of physical activity in emotion regulation in a sample of hospitalized patients.
- Clarify the psychological characteristics of patients affected by excessive exercise.
- Develop a model of understanding and treating excessive exercise starting from its role in the management of negative affects.

#### T47

### **Weight Suppression and Body Mass Index Are Joint Predictors of Severity of Psychopathology, Menstrual Status and Treatment Outcome in Anorexia Nervosa**

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Weight suppression (WS; highest adult weight minus current weight) predicts poorer outcome in bulimia nervosa, but has been little studied in anorexia nervosa (AN). Two sets of data were collected to explore the significance of WS among female, residential patients with AN. Study 1 investigated intake WS, BMI, and their interaction as cross-sectional (n = 362) and prospective (n = 245) predictors of weight gain and Eating Disorder Examination Questionnaire, Eating Disorders Inventory-3, and Beck Depression Inventory-II scores. Study 2 examined the relations of WS and BMI to menstrual status and history (n = 71). In Study 1, WS was independently positively related to intake Restraint, Eating Concern, and depression ( $p$ 's < .05). The strongest associations between WS and intake Bulimia and Body Dissatisfaction scores and WS and treatment weight gain were among those with lower BMIs at admission ( $p$ 's < .05 for BMIxWS). Independent of weight gain in treatment, the BMIxWS interaction most consistently predicted treatment response: At low BMIs, high WS predicted reduced Shape Concern, Eating Concern, Drive for Thinness, Bulimia, and depression at discharge; at high BMIs, high WS predicted elevated discharge symptoms (all  $p$ 's < .05). In Study 2, independent of BMI, intake WS correlated with fewer menstrual periods in the past 6 months ( $p = .002$ ) and with increased number of weeks since last menstrual period ( $p = .014$ ). Premorbid highest BMI correlated with higher BMI at first amenorrhea onset ( $p < .001$ ), and 36% of the sample reported amenorrhea onset at a "normal" weight (BMI > 18.5). Among those who reported past resumption of menses, BMI at that time was correlated with premorbid highest BMI ( $r = .44$ ,  $p = .062$ ). Results suggest that absolute and relative weight status are joint indicators of illness severity and dual predictors of outcome in AN. These findings may inform our understanding of DSM-5 "Atypical" AN and have major implications for goal weight determination.

#### **Learning Objectives:**

- Summarize relevance of weight suppression to bulimia nervosa, the potential utility of investigating this construct in anorexia nervosa, and emerging evidence to suggest that weight suppression is predictive of treatment response in anorexia nervosa.
- Describe interactions of absolute weight (i.e., BMI) and relative weight (i.e., weight suppression) in the prediction of psychological symptoms at admission and post-treatment, weight gain in treatment, and menstrual status in anorexia nervosa.

- Relate results to anorexia nervosa diagnostic conceptualization and recognize the importance of idiographic weight history considerations in the determination of treatment target weights for patients with anorexia nervosa.

#### **T48**

##### **Family Predictive Factors for 18-Month Outcome in Adolescents with Anorexia Nervosa**

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State purpose of the study: To explore how far the family relationships – as assessed by the construct of Expressed Emotion - remains a predictive factor of 18-month outcome simultaneously taking into account the usual predictive factors. Subject sample and simple statement of methods: Sixty adolescent girls suffering from Anorexia Nervosa (AN) and their parents were assessed at inclusion (potential predictors of outcome) and 18 months later (outcome criteria). The levels of Expressed Emotion of the two parents were evaluated at inclusion using the Five Minute Speech Sample and were rated in 2 principal dimensions: Critical and Emotional Over-Involvement. Summary data and results: The mean age of the patients at inclusion was 16.6 (SD=1.6) years old. The mean age at onset of AN was 14.8 (1.6) years and the mean AN duration was 16.6 (6.8) months. The mean current Body Mass Index was 16.9 (1.1). At inclusion, low levels of Critical and Emotional Over-Involvement were present in fathers (N=55) and mothers (N=58). Between inclusion and 18 months' follow-up, the overall sample showed significant improvement for all the outcome criteria considered. High levels of maternal Emotional Over-Involvement at inclusion are predictive of a good 18-month outcome, in terms of global outcome and fewer re-hospitalizations independently from treatment, initial clinical status and usual predictive factors of outcome. Maternal statement of loving attitudes at inclusion is predictive of lesser intensity of eating disorders at 18 months. Parental Critical is not predictive of 18-month outcome.

##### **Learning Objectives:**

- explore the contribution of family predictive factors for 18-month outcome in adolescents with anorexia nervosa.
- a better understanding of the construct of Expressed Emotion.
- focus on the positive aspects of family relationships to enhance our understanding of its role in the course and treatment of Anorexia Nervosa.

#### **T49**

##### **A Cross Sectional Study Examining the Influence of Stigma on Social Support in Individuals with Anorexia Nervosa**

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There is a paucity of research on the stigmatization of anorexia nervosa (AN). The purpose of this study was to identify the influence of stigma on social support in patients with AN. We hypothesized that stigma would be associated with low social support in individuals with AN. The study was conducted in the Eating Disorders Program at the Toronto General Hospital from 2009 to 2012. Forty-one adult patients with AN (3 male, 38 female) participated in the study. BMI ranged from 10.8 to 18.4 (M = 14.33, SD = 1.53). Participants were invited to complete standardized self-report measures of social support and various aspects of stigma at the beginning of intensive treatment. We constructed a regression model with social support as the dependent variable and predictor variables including stigma towards the individual and family, internalized stigma and shame. The predictor variables together accounted for 26% of the variance in social support. Shame made the largest contribution, on its own accounting for 16% of the variance in social support. This cross-sectional study demonstrates that stigma may be strongly associated with social support. Further exploration of this finding and its clinical implications is warranted, for example, targeting stigma may enable patients to better access social support and thereby improve their overall outcome.

##### **Learning Objectives:**

- To describe a theory that delineates the effects of internalized stigma on individuals with mental illness.
- To test a model of stigma based on labelling theory.
- To identify aspects of stigma that predict social support.

#### **T50**

##### **Weight Suppression Does Not Predict Time to Onset of Binge/Purge Symptoms in Anorexia Nervosa**

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Weight suppression (WS; the difference between highest previous adult weight and current weight) predicts the maintenance of binge/purge (B/P) behaviors in bulimia nervosa (BN) and the development of B/P behaviors in nonclinical samples. The relevance of WS in anorexia nervosa (AN) is not known. Because of the clinical similarities and frequency of crossover between AN and BN, we hypothesized that WS may similarly be predictive of B/P symptoms in AN. We hypothesized that WS would be higher in individuals with binge/purge AN (ANBP) relative to those with restricting AN (ANR), and that WS would predict prospective onset of B/P in those with ANR. This study tested these hypotheses in 118 women with AN (M age = 24.2 years, SD = 7.1) followed for a mean duration of 8.2 years (SD= 2.3) in the Massachusetts General Hospital Longitudinal Study of Anorexia and Bulimia Nervosa. Women were interviewed at 6-month intervals over the course of follow-up and B/P behaviors were measured using the Longitudinal Interval Follow-up Evaluation II-Eating Disorders Version (LIFE-EAT II), a modified version of the LIFE II interview. Cox Proportional Hazards Models were used to estimate hazards ratios (HR) for the longitudinal analyses. At baseline, WS did not differ between ANR and ANBP, even after adjusting for percent ideal body weight (mean WS 29.4 [SD=16.8] vs. 27.1 [SD=19.3] lbs,  $p > 0.05$ ) and WS did not correlate with baseline B/P frequencies ( $p > 0.05$ ). Furthermore, baseline WS did not predict time to onset of B/P in ANR ( $p > 0.05$ ). These findings suggest that the relationship between WS and B/P symptoms differs in AN and BN. In AN patients with no history of B/P, WS may instead maintain those behaviors that have allowed them to lose weight previously, e.g. restrictive eating or excessive exercise, rather than promoting B/P behaviors. Future investigations should examine the relationship between WS and other core features of AN in order to determine its role in course and outcome.

#### **Learning Objectives:**

- Describe the role of weight suppression in maintaining or predicting binge/purge behaviors in individuals with bulimia nervosa and in nonclinical samples.
- Examine the relationship between weight suppression and binge/purge symptoms in individuals with anorexia nervosa, and investigate differences in weight suppression between anorexia nervosa subtypes.
- Assess the role of weight suppression in predicting the development of new binge/purge symptoms in individuals with anorexia nervosa.

#### **T51**

#### **Somatic Outcome Among Patients Hospitalised for Anorexia Nervosa in Adolescence: Disorders Reported and Links with Global Outcome**

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This study is to describe the frequency of somatic pathologies and depression among former Anorexia Nervosa patients, and to study links with subjects' clinical history and global outcomes. 97 women hospitalised for Anorexia Nervosa during adolescence,  $9.00 \pm 1.92$  years previously, were interviewed using structured questionnaires concerning somatic and psychiatric disorders that they had experienced. Iron deficiency, migraine, cystitis, upper digestive system disorders, fractures, osteoporosis, and dental problems were reported with a frequency greater than 20%. Depression was reported by 2/3 of the sample. Osteoporosis was 14 times more frequent in case of vitamin D deficiency. Fractures were three times more frequent in presence of osteoporosis and less frequent when the overall outcome was better. Among women who had Anorexia Nervosa in adolescence, somatic comorbidities are frequent in adulthood. They are linked to the severity and the duration of Anorexia Nervosa, and to the overall outcome of the subject.

#### **Learning Objectives:**

- visualize that anorexia nervosa is a somatic illness as much as a psychiatric one.
- prescribe an appropriate follow-up for patients with anorexia nervosa.
- consider fractures as a good indicator for global outcome.

#### **T52**

#### **Weight Suppression Predicts Time to Weight Restoration and Remission from Anorexia Nervosa**

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This study investigated whether weight suppression (WS; the difference between highest past weight and weight at entry into the study) prospectively predicted time to first full or partial remission from anorexia nervosa (AN) as well as time to restoration of normal BMI over a mean follow-up period of 8.2 years. WS, above and beyond absolute body mass, has been shown to predict time to remission in bulimia nervosa (BN); however, investigators have only recently begun to explore the significance of WS in AN. In this study, 118 women diagnosed with AN from the Massachusetts General Hospital Longitudinal Study of Anorexia and Bulimia Nervosa were interviewed at 6-month intervals over the course of follow-up. Time to first partial and full remission was determined based on psychiatric status ratings generated from the Eating Disorders Longitudinal Interval Follow-Up Evaluation. Participants were grouped into WS tertiles based on baseline WS values and Cox Proportional Hazards Models were used to estimate hazards ratios (HR). There was some evidence of association between WS and time to full remission (HR= 1.18, CI=0.53 - 2.63, p=0.07). Compared to the lowest WS tertile, participants in the highest WS tertile partially remitted approximately three times more slowly (HR = 0.36, 95% CI = 0.21 - 0.60, p < .001). These associations were attenuated but remained significant when adjusting for percent of ideal body weight at study entry (ps < 0.05). Those in the lowest tertile of WS reached a BMI greater than 18.5 at four times the rate of those in the highest WS tertile (HR = 0.24, 95% CI = 0.14 - 0.42, p < .001). These results are consistent with findings in BN, suggesting that level of WS predicts, and potentially influences, the course of AN. Results suggest that treatment goals should take into account not only weight loss from a normative standard of healthy body weight but also weight loss relative to each patient's previous highest weight.

#### **Learning Objectives:**

- Appreciate the importance of relative weight loss, or weight suppression, in anorexia nervosa.
- Explain the implications of weight suppression on illness remission in anorexia nervosa.
- Explain the implications of weight suppression on BMI normalization in anorexia nervosa.

#### **T53**

##### **Predictors of Weight-Maintenance in the Year Following Hospital Discharge Among Acutely Weight Restored Women with Anorexia Nervosa**

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Patients with Anorexia Nervosa (AN) have a very difficult time maintaining the gains that they achieve during acute weight restoration treatment and rates of relapse after hospitalization are high. Factors associated with treatment success have been difficult to identify. One longitudinal study demonstrated that change in weight within the first 28 days after hospital discharge predicted long term outcome among individuals receiving psychotherapy. We sought to replicate this finding in a sample of weight-restored AN patients in a naturalistic follow-up design. A group of acutely weight restored women with AN (n=29) were followed for one year after discharge from an inpatient treatment center. Assessments of weight and eating disorder symptoms were conducted prior to discharge, at one month and at one year following discharge. Data collection is ongoing and we expect an additional 10 subjects at the time of presentation. Mean BMI was 20.4±0.9 kg/m<sup>2</sup> at discharge, 19.8±1.3 kg/m<sup>2</sup> at one month, and 18.7±2.0 kg/m<sup>2</sup> at one year. In preliminary analyses, BMI at one year was associated with BMI at discharge (r=0.657, p<.0001), BMI at the one month time point (r=0.859, p<0.0001) and change in BMI during the first month following discharge (r= 0.460, p<.05). These results support prior findings and highlight the importance of small changes in weight at critical time points (discharge and 1 month post-discharge) in identifying individuals at risk for relapse.

#### **Learning Objectives:**

- Following the training, participants will gain an understanding into the high rate of relapse following acute weight restoration for individuals with AN.
- Following the training, participants will learn about previously identified predictors for better one year outcomes for individuals with AN.
- Following the training, participants will learn about the importance of early weight changes following acute weight restoration for predicting long term outcomes in individuals with AN.

#### **T54**

##### **Family Functioning and Treatment Response in Patients with Eating Disorders: A Longitudinal Study**

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Currently, families are considered as therapeutic resource of sum importance in treatment of eating disorders. However, few is know about the relationship between its functioning and the course of the disease. The aim of the present study was to assess the relationship between family functioning characteristics and treatment response in patients with eating disorders. Participants were 40 women with eating disorders (M age = 20.5 years) evaluated in the admissions interview (Time 1) and after one year of treatment (Time 2) with Family Adaptability and Cohesion Evaluation Scale III, Communication Adolescent-Parent Inventory, Eating Disorder Inventory III and Beck Depression Inventory II. At Time 1, patients who reported high Communication problems with parents showed greater General psychological maladjustment ( $t = 2.17$ ,  $p = .03$ ). No differences were observed in any of the other measures of symptomatology (risk behaviors of eating disorder, depression) for any of the other features of family functioning assessed at Time 1 (Cohesion, Adaptability, Open communication and Restricted communication). Between Time 1 and 2, the family communication patterns generally improved [more Open communication ( $t = -2.89$ ,  $p = .006$ ) and lower Communication problems with parents ( $t = 4.04$ ,  $p = .0001$ )]. At Time 2, patients who remained with high Communication problems with both parents had higher General psychological maladjustment ( $t = 2.39$ ,  $p = .02$ ), more symptomatological risk ( $t = 2.57$ ,  $p = .01$ ) and greater depression ( $t = 2.59$ ,  $p = .01$ ). Communication problems with parents are associated with psychological distress at baseline and characterize the family functioning of patients with a lower response to treatment

### **Learning Objectives:**

- Describe the relationship between family functioning and course of illness in eating disorders.
- Compare the relationship between family functioning and course of illness in eating disorders over the time.
- Identify family functioning characteristics in eating disorders relevant for assessment.

### **T55**

#### **Weight Suppression and Body Mass Index Predict Long-Term Outcome in Adolescent-Onset Anorexia Nervosa**

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Individuals with anorexia nervosa (AN) are at low body weights relative to both their previous highest body weight (referred to as weight suppression or WS) and the medically ideal weight for their height. Prior research on AN has emphasized the importance of low absolute body weight, but emerging research suggests the importance of also considering low body weight relative to a given individual's highest premorbid weight. The current study investigated whether body mass index (BMI) and WS at the time of diagnosis among adolescents with AN predicted (1) BMI at 10-year follow-up or (2) illness duration (measured at a subsequent 16-year follow-up). Forty-eight cases of AN identified through community screening in Sweden were included. Weight and height data were collected from medical records, school nurse charts, and study follow-up assessments. Linear regression models indicated a significant interaction between weight suppression and BMI at study entry on illness duration and on BMI at the 10-year follow-up when age was controlled ( $p$ 's < .05). Results suggest that the effects of weight suppression are most pronounced in individuals at the lowest BMIs. Among those with the lowest BMIs, higher WS levels were associated with shorter illness duration and more weight gain. These results suggest that 1) for AN patients with lower BMIs and low WS, weight gain moves them close to their highest weight ever, which may be distressing and could contribute to longer time to recovery; 2) AN patients with higher BMIs may be able to recover more quickly regardless of WS because a relatively small weight gain puts them over the healthy weight threshold; and 3) the combination of relatively low BMIs and high WS may promote rapid weight gain, possibly leading to earlier recovery. This study is the first to identify the long-term predictive utility of these two weight variables in AN, and may inform the development of new treatment targets for this disorder.

### **Learning Objectives:**

- Appreciate the importance of weight history, or weight suppression, in anorexia nervosa.
- Describe the weight variables associated with shorter illness duration and higher follow-up BMI's in adolescent-onset anorexia nervosa.
- Explain the interaction between body mass index and weight suppression on long-term outcome in adolescent-onset anorexia nervosa.

### **T56**

#### **Quality of Life in an Eating Disorder Inpatient Treatment-Seeking Sample**

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Quality of life (QOL) has important implications for the treatment and recovery of eating disorders (ED). Dozens of QOL measures have been developed, ranging from disease-specific measures to generic ones. The Quality of Life Inventory (QOLI) is a psychometrically sound, generic QOL measure that assesses life satisfaction of 16 domains and yields a global QOL score. Developed for use in a clinical population, the QOLI has never been administered to an ED sample. Thus, the aim of this study is to replicate and extend existing literature by administering the QOLI to a sample of individuals seeking inpatient treatment for an ED. Fifty eight individuals (M age = 29.9, % female = 93.2, % Caucasian = 98.3) participated in this study. Participant diagnoses based on medical records were N = 27 anorexia nervosa, N = 28 bulimia nervosa, N = 3 ED not otherwise specified. Participants completed the QOLI, Eating Disorder Inventory-3 (EDI-3), and Eating Disorder Examination Questionnaire (EDE-Q). Descriptively, global QOLI scores and scores for 13/16 domains were in the “very low” range. Global QOLI scores for ED patients were not significantly different than scores for a VA inpatient sample and private inpatient sample. However, ED patients’ scores were significantly worse than scores for a recovered VA sample, an offender sample, a general undergraduate sample, and an undergraduate counseling center sample. Global QOLI scores of patients with anorexia nervosa and bulimia nervosa were statistically equivalent, replicating previous findings. However, 12 domains were statistically significantly different between patient groups. Additionally, BMI and ED symptoms as measured by the EDI-3 and EDE-Q explained 24.8% of variance in global QOLI scores. Results of this study support previous studies using different QOL measures. Future research could focus on validating this measure with an ED population by examining its factor structure and convergent and discriminant validity.

### **Learning Objectives:**

- Describe how eating disorder symptoms are related to quality of life.
- Describe the similarities and differences in quality of life for people with anorexia nervosa and bulimia nervosa.
- Compare quality of life of people with eating disorders to other clinical and non-clinical groups of people.

## **Gender, Ethnicity and Culture**

### **T57**

#### **“Yo/Eu, Gorda? Nunca!” (Me, fat? Never!): An Exploration of Latino and English Appearance-related Micro-aggressions on Twitter**

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Objective: Among Latinas, eating disorders and poor body image are a particular area of concern, with comparable or higher rates to those reported by their Caucasian counterparts. Appearance-related micro-aggressions, defined as hostile or derogatory communications focusing on physical appearance, may contribute to and create an environment that promotes eating disorders; however little is known about the extent to which such comments appear in social media. Our objective was therefore to explore the prevalence of Latina-specific appearance-related micro-aggressions on Twitter. Methods: The frequency of occurrence on Twitter of 3 typical appearance-related Latino terms in Spanish and Portuguese as well as their English translations was examined over a one-week period. Tweets containing these words were searched for using Topsy, a social media search engine. Because Latino appearance-related comments may be used to express affection as well as criticism, we also determined the valence (positive or negative) of the context in which these terms were employed. Results: Extremely high rates were found for “fat”, with averages of over 40,000 occurrences per day. Rates for the English terms were significantly higher than the Latino translations ( $p < .001$ ), however Latino terms were more likely to be used in a pejorative way ( $p < .01$ ). Findings regarding the valence of Latino terms revealed that for the term “fat” the feminine form, compared to the masculine form was more likely to be used in a pejorative way ( $p < .05$ ). Conclusions: These findings suggest that women, relative to men, may be exposed to more negative appearance-related comments on social media. Increased understanding of the impact of social media may help inform culturally sensitive treatment and prevention interventions targeting eating disorders within the Latino community.

### **Learning Objectives:**

- Describe appearance-related micro-aggressions on Twitter.
- Explore culture and gender differences in rates of appearance-related micro aggressions on Twitter.
- Discuss the role of social media in creating an environment which promotes disordered eating and body images concerns.

### **T58**

#### **Characteristics of Adolescent Boys’ Experiences of an Eating Disorder: Age, Percentage of Ideal Body Weight, Psychological Symptoms and Diagnosis**

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Research has accumulated on the characteristics and psychological symptoms that comprise adolescent girls' experiences of an eating disorder. Unfortunately, less is known about adolescent boys' experiences, and how they may be similar or different from girls. The present study examined characteristics of adolescent boys' experiences of an eating disorder, psychological symptoms, and the types of diagnoses they received at intake assessment. A medical file review of 80 boys who had received an assessment at a Canadian tertiary level pediatric eating disorders program was conducted. Information included; age, percentage of ideal body weight (% IBW), and the type of eating disorder diagnosis provided by a specialist in adolescent medicine using either the Diagnostic and Statistical Manual of Mental Health Disorders, fourth edition (DSM-IV) or Great Ormond Street (GOS) diagnostic classification system. Adolescents also completed the restraint, eating concern, weight concern, and shape concern scales of the Eating Disorder Examination Questionnaire (EDE-Q; Fairburn & Belgin, 1994; Fairburn & Cooper, 1993). Overall, boys mean age was 13.8 years and their average % IBW was 103.0. Most boys met diagnostic criteria for eating disorder not otherwise specified (29.8%), followed by anorexia nervosa, restricting type (21.4%), selective eating (14.3%), food avoidant emotional disorder (9.5%), binge eating disorder (7.1%), bulimia nervosa (4.8%), anorexia nervosa, binge eating/purging type (3.6%), and rumination (1.2%). Boys were in the clinical range across all psychological symptoms at intake including; restraint (M(SD) = 3.82(2.18), eating concern (M(SD) = 3.82(2.18), weight concern(M(SD) = 3.82(2.18), and shape concern (M(SD) = 3.82(2.18). Results highlight the importance of examining adolescent boys' experiences of eating disorders to provide a window into how they may be similar or different from girls.

#### **Learning Objectives:**

- Describe characteristics of adolescent boys' experiences of an eating disorder and how they may be similar or different from adolescent girls' experiences.
- Discuss the types of diagnoses provided to boys who present for an intake assessment.
- Consider clinical implications of these results for our understanding of adolescent boys' experiences of an eating disorder and for broadening diagnostic criteria when assessing boys.

#### **T59**

##### **A Comparison of Recruitment Strategies for Community Samples by Ethnic Group**

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Researchers often struggle to obtain a diverse community sample of ethnic minority individuals. The goal of this study was to conduct an analysis of the most effective strategies for recruiting diverse families from the community from a grant funded study on emotion regulation and maladaptive eating in children. Over 300 families were recruited from the community where 50% were ethnic minorities – of which 50% Hispanic, 30% African American, 12% Asian, and 8% other. In addition, 40% of the sample was low income families. Recruitment strategies consisted of an advertisement in the newspaper, flyers at gas stations, restaurants, family fun centers, trailer park communities, flea markets, and preschools, and email distribution to employees at a university. In addition, a snowball sampling strategy was implemented where past participants received monetary incentives for referring potential future participants. Analyses revealed that for White, high and middle socioeconomic status families, flyers at preschools were the most effective strategy followed by flyers at gas stations and mass distribution emails. For White, low income socioeconomic status families, flyers at gas stations, snowball sampling strategy, and flyers at trailer park communities were the most effective. For Hispanic and African American families (regardless of socioeconomic status), the snowball sampling strategy was the most effective, followed by flyers at restaurants and family fun centers. For Asian families, regardless of socioeconomic status, flyers at preschools were the only effective strategy. In summary, results suggest that to recruit a diverse community sample requires a variety of recruitment strategies. The snowball sampling strategy was the most effective in recruiting low income, African American, and Hispanic families. The most ineffective strategy was an advertisement in the newspaper.

#### **Learning Objectives:**

- Describe the difficulties with recruiting ethnic minority samples.
- Assemble a variety of recruitment strategies for community samples.
- Describe the most effective recruiting strategies by ethnic group and socioeconomic status.

#### **T60**

##### **Framing Eating Disorders as Disorders of the Brain: The Effects of Causal Beliefs on Stigma and Prognostic Beliefs Toward Eating Disorders**

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Studies have shown that individuals with eating disorders (EDs) are highly stigmatized. A potential source of stigma may be causal beliefs that people hold about the etiology of EDs. It has been suggested that providing a biological explanation, and in particular framing EDs as “brain disorders,” may reduce stigma. However, the impact of framing EDs as “disorders of the brain” on stigma has not yet been systematically examined. Participants (N = 444; mean age = 22.12 years, SD = 7.15; mean BMI = 23.19 kg/m<sup>2</sup>, SD = 4.84) in the current study were randomly assigned to one of nine conditions, in which they read a scenario about a woman suffering from either anorexia nervosa (AN), bulimia nervosa (BN), or binge eating disorder (BED), followed by an account of the cause of her condition as 1) a neurobiological disorder of the brain (biological causal belief), as 2) an interaction of sociocultural, psychological, and biological factors (biopsychosocial causal belief), or as 3) an individual choice (blameworthy causal belief). Participants then completed the Universal Stigma Scale (USS) and the Universal Measure of Bias (UMB) and also responded to questions assessing prognostic beliefs. It was revealed that the manipulation was effective, with participants in the biological causal belief condition agreeing more strongly that EDs are neurobiological disorders of the brain than participants in the other causal belief conditions. However, no significant differences were found in mean USS and UMB scores and prognostic beliefs within the three different ED scenarios depending on causal condition. In other words, causal beliefs did not have an impact on stigmatizing attitudes or prognostic beliefs about individuals with AN, BN, or BED. This suggests that framing EDs as “brain disorders” may not be necessary or sufficient to reduce the powerful stigma associated with these conditions.

### Learning Objectives:

- Understand the impact of stigma on eating disorders.
- Assess the role of causal beliefs on stigma.
- Identify the relationship between causal and prognostic beliefs.

### T61

#### Comparing Internalization of Appearance Ideals and Appearance-Related Pressures Among American, Italian, English, and Australian Women

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Research indicates that women from Western cultures experience relatively high levels of body dissatisfaction and eating pathology. However, few studies have directly compared mean levels of documented risk factors for body dissatisfaction and eating pathology across international samples, which may differ. The current study aimed to investigate possible mean-level differences in internalization of the thin-ideal and muscular-ideal and perceived appearance-related pressures from peers, parents, and the media among women from the United States (N = 1,740), Italy (N = 168), England (N = 141), and Australia (N = 93) using the Sociocultural Attitudes Towards Appearance Questionnaire-4. Paired t-tests conducted within each sample indicated that scores on the Internalization: Thin/Low Body Fat subscale were significantly higher than scores on the Internalization: Muscular/Athletic subscale for all samples. Repeated measures ANOVA confirmed significant differences among sources of pressure for each site. Post-hoc paired t-tests revealed that scores were the highest on the Pressures: Media subscale for all countries relative to Pressures: Peers and Pressures: Family subscales. Overall, women from the US and Australia tended to endorse the highest levels of thin-ideal internalization and appearance-related pressures. Implications will be discussed.

### Learning Objectives:

- Describe the constructs of internalization of appearance ideals and appearance-related pressures.
- Discuss differences in levels of internalization of appearance ideals and appearance-related pressures among women from the United States, Italy, England, and Australia.

- Discuss the importance of cross-cultural research and identification of culture-specific risk factors for body dissatisfaction and eating pathology.

## Risk Factors & Eating Disorders in Underserved Populations

### T62

#### **Disordered Eating and Appetite Hormones During the Menopause Transition: A Pilot Study**

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Recent reports suggest that eating disorders and eating disorder symptomatology are present at midlife despite the prominent belief that these disorders and behaviors only afflict adolescents and young adults. Findings from the young adult literature further suggest that appetite hormones are both dysregulated in and therapeutically beneficial for young women with eating disorders. It is unknown whether appetite hormones are associated with disordered eating at midlife. The goals of this pilot study were to: 1) delineate the frequency of disordered eating; and 2) explore the association between leptin and active ghrelin and disordered eating in a pilot sample of women during the menopause transition ('perimenopause'). Participants included 14 perimenopausal women enrolled in a clinical trial examining the impact of estrogen replacement therapy on cardiovascular health and stress. At baseline, prior to randomization, participants completed the Eating Disorder Examination Questionnaire (EDEQ) and fasting leptin and active ghrelin were sampled. Initial mean EDEQ subscale scores were strikingly similar to young adult normative scores. Twenty-eight percent of women exhibited total scores reflecting significant eating disturbances while 50% reported engaging in compensatory behaviors (self-induced vomiting, laxative use, diuretic use, exercising "hard") over the past 28-days. Controlling for body mass index, correlations between EDEQ subscales and leptin were positive and small to moderate ( $r$ 's=0.19-0.30) and between EDEQ subscales and ghrelin were negative and moderate to large ( $r$ 's=-0.22;-0.70). These preliminary findings suggest that disordered eating during perimenopause is exhibited at similar rates as in young adulthood and that there is a small to moderate association between appetite hormones and eating disorder symptoms. Future analyses will include all participants enrolled in the parent clinical trial.

#### **Learning Objectives:**

- Describe the empirical evidence that eating disorder symptoms exist at midlife.
- Describe the association between appetite hormones and disordered eating in young adult women.
- Assess the role of appetite hormones in eating disorder symptoms at midlife.

### T63

#### **How Common are Eating Disorders in Pregnancy? Diagnostic Challenges and Prevalence Estimates**

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The purpose of this study was to investigate eating disorder diagnostic status and related symptoms in early pregnancy. The samples consisted of a cross sectional cohort of 739 pregnant women attending their first routine antenatal scan at a large inner-London Hospital. Participants were assessed using an adapted version of the Eating Disorder Diagnostic Scale (EDDS). Diagnosis prevalence estimates and eating disorder symptoms were assessed during the first three months of pregnancy, and retrospectively in the six to twelve months prior to pregnancy. During early pregnancy 7.6% of women met criteria for an eating disorder. Prevalence estimates for anorexia nervosa (AN), bulimia nervosa (BN), binge eating disorder (BED) purging disorder (PD) and eating disorder not otherwise specified (EDNOS) during pregnancy were: 0.5%, 0.1%, 1.8%, 0.1% and 5.0%, respectively. Retrospectively reported eating disorder symptoms in the 6-12 months prior to pregnancy resulted in pre-pregnancy prevalence estimates for AN, BN and BED of 0.4%, 0.1% and 1.8%, PD and EDNOS were 1.4% and 6.1%. During pregnancy nearly a quarter (23.4%) of women reported high weight and shape concern; binge eating (with loss of control) was reported by 8.8% of women, and 2.3% of women engaged in regular compensatory behaviours such as self-induced vomiting, misuse of laxatives or diuretics. Eating disorders are common in pregnancy and eating disorder symptoms are more common than previously thought. In order for women with eating disorders to receive appropriate treatment during pregnancy there is a clear clinical need for increased awareness of eating disorders amongst antenatal healthcare professionals.

### **Learning Objectives:**

- To describe the prevalence of eating disorders and related symptom in early pregnancy.
- To identify the challenges associated with detecting and diagnosing eating disorders during pregnancy.
- To translate the findings of this research and discuss the clinical implications for treatment of women with eating disorders during pregnancy.

### **T64**

#### **Social and Emotional Processing as a Behavioural Endophenotype in Eating Disorders: A Pilot Investigation in Twins**

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Objectives: Emotional processing difficulties are potential risk markers for eating disorders that are also present post recovery. The aim of this study was to examine these traits in female twins with eating disorders. Methods: The reading the mind in the eyes task, emotional stroop task and the difficulties in emotion regulation scale were administered to 112 twins [n=51 met lifetime DSM-IV eating disorder criteria (anorexia nervosa n=26; bulimic disorders n=24), n=19 unaffected cotwins and n=42 control twins]. Generalised estimating equations (GEE) compared probands with unaffected cotwins and control twins and within pair correlations were calculated for clinical monozygotic (MZ, n=50) and dizygotic twins (DZ, n=20). Results: Emotion recognition difficulties were greater in twins with anorexia nervosa than their unaffected co-twin and the control twin group ( $d=-0.3$ ;  $p<0.05$ ). An attentional bias to social threat was most pronounced in twins with bulimic symptomatology ( $d=0.7$ ;  $p<0.05$ ) and present in their unaffected twin siblings with a medium effect size, suggestive of a familial trait. Evidence for a possible genetic basis was highest for emotion recognition and attentional biases to social stimuli. Conclusion: Emotion recognition difficulties and sensitivity to social threat appear to be endophenotypes associated with eating disorders. However, the low power particularly between subgroups means that these findings are tentative and need further replication.

### **Learning Objectives:**

- To assess the association with the illness in the population', by comparing probands with control twin.
- To examine co-segregation with the illness in families' by comparing unaffected cotwins with controls twins
- To investigate the 'heritability', by comparing MZ and DZ twins with the expectation that performance within MZ twin pairs will be more similar since they share 100% of genes, in comparison to DZ twin pairs who on average share only 50% of genes.

### **Risk Factors for Eating Disorders**

### **T65**

#### **Disgust Sensitivity and Disgust Conditioning in the Pathogenesis of Anorexia Nervosa: A Novel Theory**

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We propose that disgust sensitivity and disgust conditioning play a central role in the pathogenesis of Anorexia Nervosa (AN). AN is a chronic psychiatric disorder, is associated with severe medical and psychological consequences including the highest mortality rate of all psychiatric disorders, and evidences poor response to psychological and psychiatric interventions, particularly among adults. A core pathological process in AN is food avoidance, in which patients narrow the range and amounts of food consumed, resulting in weight loss and maintenance of low body weight. Classical conditioning has been implicated in the development of food avoidance and it has been posited that the primary mechanism is fear conditioning, in which patients learn to associate foods with a fear response and subsequently avoid these foods. However, psychological interventions targeting patients' food-related anxiety have been largely ineffective; reductions in fear, which is flexibly learned, has not resulted in decreased food avoidance in this population. This suggests that a fear-based learning model of AN does not adequately explain pathological food avoidance. From a neurobiological perspective, it has been hypothesized that dysfunction in insula is central to the development and maintenance of AN. Whereas threat detection and fear are primarily associated with activation of the amygdala, the perception and integration of disgust is associated with increased activation of the insula. We therefore propose that disgust conditioning, which is less flexibly learned than fear, may be the primary mechanism involved in food avoidance among those with AN. Treatments for AN have not focused on patient's disgust response to food, which may account for poor

treatment outcome. Further understanding of disgust sensitivity and disgust conditioning in patients with AN is therefore critical for the development of more effective treatments for this population.

### **Learning Objectives:**

- Describe the role of classical conditioning in food avoidance among patients with Anorexia Nervosa.
- Describe why classical conditioning of disgust, rather than fear, may largely explain pathological food avoidance in patients with Anorexia Nervosa.
- Assess how treatment for Anorexia Nervosa may be augmented to address patients' disgust reaction to food.

### **T66**

#### **Primary and Secondary Exercise Dependence in Recreational Road Race Runners**

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Exercise dependence (ED) is often observed at high levels in samples of runners. However, little is known regarding its relationship with secondary disorders (i.e. eating disorders). The purpose of our study was to examine differences in ED symptom scores for those with primary ED (e.g. ED alone) and secondary ED (e.g. ED in conjunction with eating disorder symptoms). Participants were 2660 runners (M age = 38.78, SD = 10.80; 66.39% women; 91.62% Caucasian; body mass index (M = 24.41, SD = 3.84) that completed the Exercise Dependence Scale (EDS), Obligatory Exercise Questionnaire (OEQ), and Goldfarb fear of Fat Scale. Primary and secondary ED groups were based on scores above or below 30 on the Fear of Fat Scale. Thus, 80.51% of men and 68.56% of women were in the primary group and 19.49% of men and 31.44% of were in the secondary group. ED symptom scores on the EDS [ $F(8,1) = 14.13, p = .01$ ,] and OEQ [ $F(8,1) = 14.48, p = .01$ ] increased with race distance (e.g. 5k, 10k, 1/2 marathon, marathon, relays). Higher rates of secondary ED were observed for both men (0.94% secondary ED vs 0.28% primary ED) and women (1.50% secondary ED vs 0.08% primary ED). These results suggest that examining exercise amount alone does not give a clear view of the scope of ED and related pathologies. Future research is encouraged to examine the health impact in runners with primary and secondary ED.

### **Learning Objectives:**

- Describe prevalence of pathologically excessive exercise in a community sample.
- Distinguish high amount of exercise from secondary eating disorder risk.
- Compare multiple methods of excessive exercise assessment.

### **T67**

#### **The Relationship Between Gender-Specific Family Functioning and Severity of Eating Disorder Symptoms in Patients with AN at Illness Onset**

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The objective of this study is to take a snapshot of the family environment and identify factors related to dysfunctional patterns of family's response to the illness that may be associated with the severity of ED symptoms at AN onset in adolescents. A total of 48 mothers and 45 fathers of 50 patients aged from 12 to 18 years, with a mean duration of illness of 15.74 months (SD = 12.58) all diagnosed with AN according to DSM-IV, were recruited from an ED Unit in Madrid (Spain) on the first day they were referred for treatment. Caregivers completed self-report assessments related to anxiety and depression (HADS), family adaptability and cohesion (FACES-II), ED symptom accommodation (AESED), Expressed Emotion (EQ) and quality of life (SF-36), and patients went through clinical interviews examining ED symptoms (EDE-12) and comorbidity with other mental disorders (K-SADS) and completed a self-report questionnaire assessing ED attitudes and behaviors (EAT-26). Mothers showed higher levels of anxiety and emotional over-involvement and exhibited a poorer quality of life compared to fathers. In addition, ED attitudes and behaviors were positively associated with criticism, lack of adaptability, anxiety, depression and symptom accommodation in fathers. In mothers they were associated with emotional over-involvement, lack of cohesion and adaptability, anxiety, depression and symptom accommodation. With regard to the predictors of ED related attitudes and behaviors, mothers' perceived lack of family adaptability and cohesion and anxiety accounted for 40% of the variance whereas fathers' ED symptom accommodation and anxiety accounted for 29% of the variance. Interventions that help parents to cope with

their caregiving role should target behavioral, cognitive and emotional responses, and be gender-specific for mothers and fathers, thereby possibly improving the outcome of AN in patients.

### **Learning Objectives:**

- Take a snapshot of the family environment at AN onset in adolescence.
- Identify family factors that may be associated with the severity of ED symptoms in patients with early-onset AN.
- Identify family behavioral, cognitive and emotional responses to the illness that may be gender-specific among mothers and fathers of adolescent patients with AN.

### **T68**

#### **Disordered Eating Among Collegiate Female Athletes: The Role of Sport Type on the Relationship Between Pressure to Perform and Eating Disorder Symptomatology**

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Female collegiate athletes represent a population of individuals who are at increased risk for disordered eating. Research suggests that the type of sport that an individual participates in (aesthetic, non-aesthetic or non-lean) as well as whether they are assessed on or off season, as two probable predictors of eating disorder symptomatology. The purpose of the current study was to assess whether sport type, both on and off season, moderated the relationship between an athlete's self-reported feelings of pressure to control and change the body to increase performance and eating disorder behaviors. 176 female athletes representing aesthetic lean sports (figure skating and gymnastics), non-aesthetic lean sports (cross-country running and cycling), and non-lean sports (soccer and field hockey) were assessed both on and off season. Results indicate a significant interaction between sport type and pressure to increase performance, with non-aesthetic lean athletes reporting higher levels of eating disorder symptomatology when pressure to lose weight for performance reasons is high,  $F(2, 163) = 4.70, p = 0.01$ . Post-hoc analysis showed no reported interaction between seasonal status and sport type,  $F(2, 163) = 0.67, p = 0.51, \eta^2 < 0.01$ , observed power = 0.16. However, a significant main effect for seasonal status was obtained,  $F(1, 163) = 4.69, p = 0.03, \eta^2 < 0.03$ , observed power = 0.58. Contrary to the hypothesized effect, general eating disorder symptoms were significantly lower during the athletic season ( $M = 6.96 \pm 7.58$ ) than in the off-season ( $M = 7.96 \pm 8.697$ ). Findings suggest that female athletes who feel a high level of pressure to change their body in order to increase their performance and also participate in non-aesthetic lean sports are more at risk for engaging in eating disorder behaviors than their peers who participate in aesthetic lean or non-lean sports. These findings provide groundwork for treatment prevention programs tailored to certain athlete groups.

### **Learning Objectives:**

- To assess the effect that sport type has on an individual's feelings about pressure to perform and their eating disorder symptomatology.
- To address whether there is a significant difference between the type of sport an individual participates in and their level of eating disorder symptomatology.
- To identify any difference between female athlete's eating disorder symptomatology and their seasonal status.

### **T69**

#### **A Longitudinal Test of the Relation Between Self-objectification and Disordered Eating: Body Shame And Sexual Self-efficacy as Moderators**

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Self-objectification has been linked to disordered eating in a number of studies. Efforts to better understand this relation have included examining body shame as a moderator, which has yielded cross-sectional support. Bridging the eating disorder and risky sexual behavior literatures, sexual self-efficacy (i.e., confidence in one's ability to say "no" in an unwanted sexual situation) also appears to moderate the self-objectification/disordered eating relation cross-sectionally. To date, no research has examined body shame or sexual self-efficacy in moderation models of self-objectification/disordered eating using a longitudinal design. Female undergraduates ( $N=244$ ) completed an online survey with questions about body surveillance (the behavioral manifestation of self-objectification), body shame, sexual self-efficacy and disordered eating (EAT-26 & EDE-Q) at two time points, about one year apart. Controlling for baseline levels of eating pathology, results indicated that the combination of high body surveillance and high body shame (or low sexual self-efficacy) predicted the highest levels of eating concern and broad disordered eating a year later, though this finding was marginal ( $p = .065$ ) for the body surveillance/body shame/EAT-26 relation. This is the first time moderators have been found longitudinally for the relationship between self-objectification and disordered eating. Further, this finding supports the validity of sexual self-efficacy as a moderator in this model, reinforcing work investigating the relationship between sexual attitudes and disordered eating.

### **Learning Objectives:**

- understand the longitudinal relationship between self-objectification and disordered eating, with body shame and sexual self-efficacy as moderators.
- evaluate the link between disordered eating and sexual attitudes, and understand how the two might be related.
- distinguish between past research, which has primarily focused on cross-sectional mediation models of Objectification Theory, and the current study, which focuses on longitudinal moderation models.

### **T70**

#### **Eating Related Environmental Factors in Underweight Eating Disorders and Obesity: Are There Common Vulnerabilities During Childhood and Early Adolescence?**

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Objective: To examine whether there is an association between individual, social and family influences and dysfunctional eating patterns early in life and the likelihood of developing a subsequent underweight eating disorder (ED) or obesity. Method: The total sample comprised 152 individuals (underweight ED: n=45, obese patients: n=65, healthy controls: n=42) from Barcelona, Spain. The Cross-Cultural Questionnaire (CCQ) was used to assess early eating influences as well as individual and family eating patterns and attitudes towards food. Results: Even though a few shared eating influences emerged for both groups, unique factors were also observed ( $p < 0.05$ ). While relationship with friends [Odds Ratio (OR)=4.04], teasing about eating habits by family members (OR=3.25) and the mass media (OR=3.24) were of specific relevance to the underweight ED group, the patient's own physical appearance (OR=2.84), body dissatisfaction (OR=11.3), teasing about eating habits by friends (OR=5.20), teasing about body shape by family members (OR=3.23) and various dysfunctional eating patterns were unique to obesity ( $p < 0.05$ ). Conclusions: Overlapping environmental risk factors provide evidence for integral prevention and intervention approaches that simultaneously tackle a range of weight-related problems. The unique factors might be important for targeting high-risk individuals.

### **Learning Objectives:**

- to examine whether individual, family, and social eating influences differed in extreme weight conditions including underweight ED and obesity patients.
- to investigate whether early eating patterns and family attitudes towards food differed in extreme weight conditions comprising underweight ED and obesity patients.
- to assess whether overlap of shared factors between the underweight ED and obesity groups provides evidence for an integrated prevention program that tackles a broad spectrum of weight-associated conditions.

## **Treatment of Eating Disorders**

### **T71**

#### **Guided Self-help CBT Treatment for Bulimic Disorders: Effectiveness and Clinical Significant Change**

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Individual Cognitive Behavioural Therapy (CBT) is the first line treatment for Bulimia Nervosa although several alternative, less intense, less costly, and more widely available forms of treatment have been suggested. Self help manuals have shown to be effective. Usually, the self help manual is used in the form of guided self help, since advantages are recognized for treatment compliance and some studies have found some benefit in this form of delivering treatment. The aim of this study was test the effectiveness of a guided self help manual in the treatment of Bulimia Nervosa, Binge Eating Disorder and Atypical Bulimia Nervosa as a first step in a stepped care approach. Outcome of treatment was analysed in terms of statistical and clinical significance. Patient perception of change is also be reported. A self help manual was developed and used as part of a guided self help

program. Participants were assessed at the beginning and the end of the treatment and reassessed at follow up at 6 months using Eating Disorder Examination Questionnaire (EDE-Q), Outcome-Questionnaire – 45 (OQ-45) and Beck Depression Inventory (BDI). Forty one patients participated in this study with Bulimia Nervosa diagnosis or Binge Eating Disorder. Results showed a significant reduction in EDE scores for all scales and for OQ-45 and BDI. There is a considerable significant reduction in binge episodes ( $F(1.60, 30.48) = 30.97$ ;  $p < .001$ ). Comparisons revealed that frequencies were reduced from pre to post treatment and follow up. Purging behaviours also show a significant reduction ( $F(1.8, 18.32) = 10.86$ ;  $p < .001$ ). Reliable and Clinically significant change occurred for the majority of participants all eating dimensions. Participants considered to have “improved” or “much improved” with treatment at six months and 12 months follow up. Self help treatment showed to be effective in improving the clinical state of the participants in regard to their eating behaviour and psychological distress.

#### **Learning Objectives:**

- Describe the effectiveness of guided self help for bulimic disorders.
- Analyse outcome for Guided self help in terms of clinical significant change.
- Discuss the importance of different outcome criteria in effectiveness studies.

#### **T72**

#### **Predictive Equations Compared to Resting Energy Expenditure in Adolescents with Anorexia Nervosa: A Novel Proposal Formula**

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Resting energy expenditure REE can be measured or estimated. Although estimated values from the predictive equations are often adequate in normal population, the data available on in the malnourished patient with anorexia nervosa (AN) show that these estimates inadequately the REE. The adequate measurement is crucial in situations where overfeeding and underfeeding may result in serious medical consequences, and the energy prescription must be sufficient to promote progressively but steady weight gain for the nutritional recovery, this knowledge will improve clinical care and outcome of the patients. Aim of this study was to compare in female adolescent patients ( $N=190$  age 15.07) with diagnosis of AN the REE measured by indirect calorimetry (CI) compared with the estimated by the predictive equations OMS-FAO, Schofield, Harris Benedict, Muller, Schebendach and also included the proposal formulas Madruga-Rodriguez and the M-R Factor in the first week of hospitalization in a specialized unit for refeeding. The formula Madruga-Rodriguez for and MR-Factor are a regression equation created by the REE measure by CI of AN patients. Predictive equations showed significance difference with ANOVA  $P < 0.05$  and a low concordance interval with the actual REE measured by CI, and the percentage estimated was OMS-FAO (130.99%), Schofield (143.28%), Harris Benedict (122.18%) Müller (95.07%), Schebendach (86.43%) of the mean values, the formulas with a medium predictive estimation of Madruga-Rodriguez (100.9%) and MR-factor (103%), has a moderate interval confidence. Both of these novel equations are another method to estimate the REE for females adolescents with diagnosis of AN. The estimation of the REE is important for the prescription of the initial caloric intake and it should be gradually increased during the first weeks according to the clinical responses and the appropriate weight gain to prevent serious medical consequences of the overfeeding.

#### **Learning Objectives:**

- To evaluate the accuracy of predictive equations to estimate the resting energy requirement in anorexia nervosa patient.
- To restate that the adequate prescription of the energy requirements is crucial in situations where overfeeding and underfeeding may result in serious medical consequences.
- To acquire novel formulas to estimate the energy requirement that is better adjusted for this specific population.

#### **T73**

#### **Developing the Dietetic Workforce: Education and Support Needs of Dietitians Working in the Eating Disorders Field**

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There is a paucity of literature on the education, clinical supervision and professional development needs of dietitians in the eating disorders field. This study aimed to address the lack of data by surveying dietitians

working with eating disorders across Australia. Between December 2010 and March 2011, 149 dietitians working in private practice, universities, community health and public and private hospitals completed the broad-ranging online survey. Ninety percent indicated their university training inadequately prepared them for their work in the eating disorders field, with 65% seeking additional formal training. While 53% were satisfied or very satisfied with their work, 46% received no clinical supervision or mentoring from practitioners experienced in eating disorders, with most acknowledging they needed more. Nearly all of those who received supervision or mentoring believed it improved their effectiveness in the workplace, regardless of whether this was dietetic or psychological supervision. Furthermore, those receiving supervision or mentoring reported greater job satisfaction than those who did not ( $p < 0.05$ ). This research benchmarks current training and clinical support levels of dietitians working in contemporary eating disorder practice and may be used to improve existing professional development and supervision opportunities as well as inform the development of new practice standards. Further research should examine more specific training and supervision requirements in various workplace settings, as well as establish similar benchmarks in other countries.

#### **Learning Objectives:**

- Identify education and professional development needs of dietitians working in the eating disorders field.
- Examine the effect of clinical supervision or mentoring on job satisfaction in eating disorder dietitians.
- Recommend minimum standards for training, clinical supervision and professional development for dietitians working in the eating disorders field.

#### **T74**

##### **A Prospective Longitudinal Study of Service Effectiveness at the Maudsley Hospital Child and Adolescent Eating Disorders Service**

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There is growing research on specific treatments for ED but little is known about the service contexts of treatment delivery. We report a prospective longitudinal evaluation of a service effectiveness study conducted at the Child and Adolescent ED service (CAEDS) at the Maudsley Hospital of a consecutive case series of 90 adolescents describing the range of treatments of different intensity (including individual therapy, multifamily therapy, intensive day treatment and inpatient treatment) provided by the multidisciplinary team in addition to our usual family therapy. Assessment measures included the Development and Well-Being Assessment (DAWBA) the Eating Disorders Evaluation Questionnaire (EDEQ) and the Eating Disorders Quality of Life Scale (EDQLS) administered at assessment, 3, 6, and 9 months and at discharge from the service. Weight as percentage median BMI (%mBMI) for age and height was recorded for each patient at all five time points. At assessment 41.1% had a diagnosis of AN, 38.9% met criteria for EDNOS restricting type, 14.4% a diagnosis of BN, and 5.6% EDNOS bulimic type. The majority were seen as outpatients only with 12 (13%) attending the ITP day programme and nine (10%) admitted for inpatient treatment. Treatment lasted on average 12 months with a mean of 23 sessions after which 74 (82.2%) were considered sufficiently recovered not to require any further ED treatment and were either discharged to GP (N=59) or transferred to other mental health service for treatment of co-morbid disorders (N=15). Only 9 (10%) were transferred to adult ED service. Three (3.3%) declined any treatment and three (3.3%) attended less than 3 sessions or did not engage with treatment. There were significant improvements on EDEQ, EDQLS and %mBMI. At discharge average EDEQ scores were in the healthy range and more than half of AN patients had regained their periods. %mBMI for AN and EDNOS-R at discharge to GP or community mental health services was 91% and 98% respectively

#### **Learning Objectives:**

- Understand the CAEDS Maudsley service model whereas professionals from different disciplines work collaboratively to provide coordinated treatment integrating different therapeutic modalities, therapeutic setting and provisions.
- Have knowledge of the child and adolescent eating disorders outcomes and recovery rates in the “real world” of a specialist child and adolescent eating disorder service.
- Have information on user satisfaction with the Maudsley service model of treatment.

#### **T75**

##### **The Perception of the Influence of Emotions in Clinical Decision-Making in Child and Adolescent Eating Disorders: A Canadian Study**

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Family-based therapy (FBT) is considered best practice for child and adolescent eating disorders (ED). This model of treatment can be very effective with families; however, while many adolescents and recover with FBT, a significant minority do not respond adequately to this treatment modality. Given the potential for grave consequences related to EDs, especially in childhood and adolescence, it is necessary to explore factors that may hinder treatment outcome. Within the last 5 years, two theoretical models have emerged that identify clinician-factors that may negatively affect the treatment of EDs. Interestingly, both models highlight clinicians' emotions as important factors that may negatively impact treatment. The potential adverse effects of clinicians' emotions in general clinical decision-making have also been reported, especially when working with complex and life-threatening illnesses. In light of this body of research, as part of a larger multi-national study, the present study aims to explore clinicians' perceptions of the influence of emotions in their clinical decision-making in the field of child and adolescent EDs in Canada. ED clinicians from across Canada who work with children and adolescents completed a survey designed to explore their perceptions the role of emotions relative to clinical decision-making. A subset of the Canadian sample also participated in qualitative interviews in order to explore the lived experience of this phenomenon. Results will summarize the perceived frequency of occurrence, specific contexts, and lived experience of the influence of emotions in clinical decision-making. Implications are discussed in terms of improving self-reflective practice and reducing clinician-emotion factors that may negatively impact the treatment of child and adolescent EDs.

### **Learning Objectives:**

- To explore the perceived role of emotion in clinicians' decision-making when working with children and adolescents with eating disorders.
- To identify contexts in which clinicians' perceive themselves to be particularly vulnerable to the influence of their emotions when working with children and adolescents with eating disorders.
- To describe the lived experience of the influence of emotions on clinical decision-making of clinicians working in the field of child and adolescent eating disorders.

### **T76**

#### **Shifting Paradigms: Continuous Nasogastric Feeding with High Caloric Intakes in Anorexia Nervosa**

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The initial goal of admission for a patient with anorexia nervosa is physiologic stabilization through nutritional rehabilitation. The need to correct weight loss must be balanced against the risk of refeeding syndrome. Common inpatient treatment involves low initial caloric intakes, whereas a recent alternative approach emphasizes meal composition, limiting carbohydrates, to reduce risk. The Montreal Children's Hospital's has instituted a standardized high-calorie continuous nasogastric (NG) refeeding protocol for the initial management of inpatient adolescents with restrictive eating disorders. This study aims to confirm that this protocol results in a shorter admission duration and faster rate of weight gain without increased incidence of complications. A retrospective chart review was conducted of patients with restrictive eating disorders admitted to the Montreal Children's Hospital during December 2003 to December 2011. Those treated with higher calorie NG refeeding protocol (N=31) were compared to those managed with a standard bolus meal treatment (N=134). Length of stay was significantly reduced in the NG fed cohort (NG cohort 33.8 days ; bolus fed cohort 50.9 days;  $p=0.0002$ ). Mean rate of weight gain in the NG group was significantly improved for both the first and second week when compared to the bolus fed cohort (1.22 kg/week (1);  $p=0.01$ ; 1.06 kg/week (0.9),  $p=0.04$ ). No significant difference was found in the rate of complications. This study provides further evidence to support the treatment of undernourished inpatients with restrictive type eating disorders with a higher initial caloric intake (65-75% of estimated needs) to achieve rapid and safe nutritional rehabilitation.

### **Learning Objectives:**

- Review current in-patient treatment goals for adolescents with restrictive type eating disorders.
- Identify novel modalities and nutritional prescriptions for the inpatient treatment of restrictive type eating disorders.
- Examine the effectiveness and safety of certain new approaches to the inpatient management of eating disorders.

### **T77**

#### **Motivation for Change as a Predictor of Treatment Outcome Using the YBC-EDS in a Residential Eating Disorder Population**

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The aim of this study was to utilize the Yale-Brown-Cornell Eating Disorder Scale (YBC-EDS) to measure treatment outcomes in transdiagnostic patients with severe eating disorders, and to determine if motivation for change (YBC-EDS-M) related to improvement in symptom severity at discharge. YBC-EDS assesses severity and motivation for change in preoccupations and rituals associated with eating, weight and shape. The severity scale (YBC-EDS-S) is modeled after the YBOCS, an established instrument measuring severity and treatment outcome for Obsessive Compulsive Disorder. The YBC-EDS-S assesses time occupied, interference, distress and control of preoccupations and rituals. YBC-EDS-M assesses egosyntonic, reasonableness and desire for change. Adults and adolescents admitting for treatment who consented to research completed self-report format at admission (N=69), and discharge (N=31). Participants were predominantly White, ranged in age from 12-54 years old (M=22 years), and 73% female. 42% percent were diagnosed with Anorexia Nervosa-restricting, 18% were Anorexia Nervosa-Binge Purge, 14% were Bulimic, and 13% were Eating Disorder-NOS. 29% percent had a comorbid anxiety diagnosis including Obsessive Compulsive Disorder, Social Phobia and Generalized Anxiety Disorder. Internal consistency of subscales was excellent ( $\alpha=78-.96$ ). YBC-EDS-M scale showed the least consistency. YBC-EDS-S exhibited significant improvement from admission to discharge (M=6.9, SD=9.47;  $t(30)=4.1, p<.01$ ), as did the YBC-EDS-M (M=3.22, SD=3.7;  $t(30)=4.74, p<.01$ ). YBC-EDS-M significantly correlated with improvement on YBC-EDS-S,  $r=.56, p<.01$ . Desire for change had the highest correlation with outcome ( $r=.68$ ), while egosyntonic ( $r=.325$ ) and reasonableness ( $r=.435$ ) correlations were moderate. Results indicate that both the severity and motivation scales of the YBC-EDS are useful in measuring treatment outcomes, and that desire for change at admission is the strongest predictor of treatment outcome.

### **Learning Objectives:**

- Demonstrate the usefulness of the YBC-EDS in characterising eating disorder severity (preoccupations and rituals).
- Demonstrate the usefulness of the YBC-EDS in measurement of treatment outcomes.
- Establish the predictive ability of desire for change in treatment outcomes.

### **T78**

#### **The Pros and Cons of Changing Eating as a Core Element of CBT for the Eating Disorders**

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Dietary change is a core element of evidence-based cognitive-behavioural therapy (CBT) for the eating disorders. However, many CBT clinicians do not encourage patients to change their eating pattern or content, preferring to focus on cognitive challenges, often because they fear that patients will have a negative reaction to the prospect of such change. There is the risk that this short-term strategy means that there is never a point where the clinician feels safe to start the process of dietary change. This study addressed what patients experience when they eat differently as part of CBT for their eating disorder, in order to inform both patients and clinicians about the pros and cons of such change. A cohort of patients in the latter part of CBT for their eating disorder were asked to identify the short- and long-term pros and cons of changing the structure and content of their dietary intake over the course of that treatment. Percentage responses and themes were extracted by the researchers. These patients described their short-term reactions to the change in their eating as mixed, with high levels of anxiety, but improvements in their social and physical functioning. Long-term, they reported consistently positive reactions to their change in diet, feeling happier and less anxious, with improved cognitive and social functioning. Patients find the focus on dietary change in CBT to be initially anxiety-inducing. However, if patients and clinicians alike stick to the target of improving the structure and content of food intake, there are benefits that are sustained in the form of better biological, cognitive, emotional and social functioning. This information can be shared with patients to reassure them that there are good reasons to stick with dietary change.

### **Learning Objectives:**

- Detail the negative consequences of eating as part of CBT for the eating disorders.
- Understand the positive consequences of eating as part of CBT for the eating disorders.
- Help patients to see that it is worth being anxious about eating in the short term, to get the positive consequences of making that change.

### **T79**

#### **A Study of the Efficacy of Acceptance and Commitment Therapy for Women with Disordered Eating: An Alternative to CBT**

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The overall goal of Acceptance and Commitment Therapy (ACT) as applied to eating disorders is to foster more flexible and mindful ways of understanding and relating to disordered eating symptomology. Throughout treatment, ACT balances acceptance and mindfulness processes with commitment and behaviour change processes. ACT seeks to facilitate the acceptance of difficult mental experiences and helps individuals to behave

in ways that are consistent with their personally held values. This study evaluated the effectiveness of an ACT intervention adapted for use with individuals presenting with eating disorders. Thirty adult women who met eating disorder criteria, and also self-reported that their eating behaviours were affecting their quality of life, were treated in six, 2-hour group sessions of an ACT intervention. Participants completed standardized self-reported questionnaires designed to measure eating disorder symptoms (Eating Disorder Inventory II), quality of life (Eating Disorder Quality of Life Scale), acceptance (Acceptance and Action Questionnaire II) and mindfulness skills (Kentucky Inventory of Mindfulness Skills). Questionnaires were completed at the commencement and end of treatment, as well as at a three-month follow-up. Results indicated significant changes in pre- and post-treatment data on ACT-related process measures (e.g., reduction in experiential avoidance, increases in acceptance and mindfulness skills), significant increases in quality of life, as well as reductions in eating disorder and distress measures. Participants maintained or showed improvement on their level of functioning at follow-up. These findings add to the growing body of literature supporting the use of an acceptance and mindfulness approach in the treatment of eating disorders.

#### **Learning Objectives:**

- Understanding how ACT differs from other Therapies.
- Familiarization with the six domains of ACT: Flexible contact with the present; Willingness to accept; holding lightly stories about oneself; exploration of what matter most; commitment to action; taking a new perspective on the meaning of be oneself.
- Describe the significant role that values plays when working with women with eating disorders.

#### **T80**

#### **A Randomized Clinical Trial of the “Broad” and the “Focused” Versions of Enhanced Cognitive Behavioral Therapy for Patients with Bulimia Nervosa and Co-occurring Affective and Interpersonal Problems**

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Enhanced transdiagnostic cognitive behavior therapy (CBT-E; Fairburn, 2008) has demonstrated similar efficacy to traditional cognitive behavior therapy (Fairburn et al., 2009). The “broad” version of CBT-E, which integrates interventions for affective, interpersonal, and other obstacles to treatment, has not conclusively demonstrated additional efficacy for the complex patients it is designed to benefit (Fairburn et al., 2009). This study aimed to compare the efficacy of the “broad” and “focused” versions of CBT-E for patients with purging and nonpurging bulimia nervosa (BN) with co-occurring clinical levels of interpersonal and affective problems as assessed by the Diagnostic Interview for Borderlines (DIB-R; Zanarini et al., 1989). N=50 female patients with BN and scores of >5 on the DIB-R were randomly allocated to CBT-E focused (CBT-EF) or CBT-E broad (CBT-EB). Baseline, termination, and six-month follow-up eating disorder symptoms were assessed on the Eating Disorder Examination by reliable raters blind to treatment condition. Therapists had extensive training and demonstrated competency in both versions of CBT-E. Statistical analyses examined whether baseline severity in eating disorder symptoms, baseline severity in co-occurring affective and interpersonal problems, and treatment condition predicted outcome. Statistical analysis also examined whether severity of eating disorder symptoms and severity of co-occurring affective and interpersonal problems moderated response to CBT-EF and CBT-EB. Multiple significant relationships between baseline symptoms, treatment condition, interaction terms, and outcome were found. This presentation demonstrates significant relationships between treatment and outcome for this severe population, and helps to answer key questions about the use of the integrative version of CBT-E “broad” for the population it is intended to benefit.

#### **Learning Objectives:**

- describe the general effectiveness of enhanced cognitive behavior therapy for patients with bulimia and co-occurring affective and interpersonal problems.
- compare the efficacy of the 'broad' version of cognitive behavior therapy to the 'focused' version for patients with bulimia and co-occurring affective and interpersonal problems.
- describe for which patients patients with bulimia and co-occurring affective and interpersonal problems the 'broad' and 'focused' versions may be more useful.

#### **T81**

#### **Patient and Parent Perspectives Regarding the Treatment of Eating Disorders Among Youth: Treatment Experiences, Recommendations and Perceived Effectiveness**

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The purpose of the present study was to consider the experiences, perspectives and treatment preferences of youth, and their parents, undergoing treatment for an eating disorder in a pediatric setting with an emphasis on family involvement in treatment. A total of 74 youth, and 74 of their parents, completed open ended questions regarding which aspects of treatment they found most helpful, which aspects of treatment they disliked or would change, how treatment was successful, and how treatment impacted their family relationships. A content analyses of patient and parent responses was conducted. Comments made by patients and their parents pertaining to aspects of treatment they either found helpful or would like changed fell within four main categories, including treatment provider (therapeutic relationship, professionalism), treatment type (individual therapy, family therapy, group therapy, nutritional counseling, medical monitoring, psychiatric consultation), treatment focus (behavioral symptoms of eating disorder, psychological symptoms of eating disorder, comorbidity, balance of focus among these), and functional needs (treatment setting, location, appointments, transition planning). Of particular interest were patients comments about family therapy, which addressed parent involvement, therapist as child's advocate, psychoeducation for parents, caregiver support, and sibling involvement. When commenting on treatment outcomes, patients and parents made reference to patient specific outcomes (behavioral symptoms of eating disorder, psychological symptoms of eating disorder, comorbidity), family relationship changes (communication, closeness, conflict, emotional climate), and family coping skills (understanding of illness, understanding of family members, coping skills). If we are mindful of patient perspectives and preferences in treatment, we are likely to improve patient satisfaction, a predictor of patient commitment to therapy and treatment outcomes.

### **Learning Objectives:**

- Describe the findings of existing qualitative studies of patient perspectives of eating disorder treatments.
- List the primary aspects of treatment that patients are grateful for or would want to be improved.
- Describe patients' and parents' perspectives of the benefits of therapy, including the changes noticed in the patient and the family.

### **T82**

#### **Motivational Interview Scenarios Tool for Eating Disorders (MIST-ED) as an Instrument of Measuring Motivational Interviewing Skills After a Training for Caregivers of Patients with Eating Disorders: A Controlled Study**

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The Motivational Interview Scenarios Tool for Eating Disorders (MIST-ED) has been developed as a specific instrument to assess the implementation of MI skills amongst caregivers in eating disorders after a skills-based intervention. The objective of this study is to examine differences in written scenarios (MIST-ED) between Maudsley Collaborative Care Skills Workshop group and classical Psychoeducational intervention group as well as to evaluate sensitivity to change along different assessment stages, before intervention (T0), after intervention (T1) and at a 3-month follow-up (T2) between both intervention groups. A total of 50 primary caregivers (48-60 years old) were recruited from a Mental Health Service in Madrid and were consecutively assigned to each of the two intervention conditions (Maudsley Collaborative Care Skills vs classical Psychoeducational). Both interventions were delivered six 2-hour workshops over a 3-month period followed by a follow-up workshop after 3 months. There were no differences on patients' characteristics regarding age and illness duration. Caregivers were asked to provide a written response to two written scenarios describing stereotyped situations regarding eating problems and related topics in their daily life as caregivers, along each one of the three assessment periods. Results showed that at the end of the treatment (T1), MI adherent statements of caregivers who had followed Maudsley Collaborative Skills intervention increased significantly, in terms of empathy and non-confrontation statements, making open questions and affirmations and offering help, support and choices, although there was a tendency for these to decrease at the follow-up (T2). However, the proportion of MI non-adherent statements remained stable along each treatment stage in the classical Psychoeducational group, in terms of confrontational, critical and hostile statements, giving too much advice or direction or invalidating ED symptoms.

### **Learning Objectives:**

- Examine differences in written scenarios between Maudsley Collaborative Care Skills Workshop group and classical Psychoeducational intervention group.
- Evaluate sensitivity to change along different assessment stages: before intervention (T0), after intervention (T1) and at a 3-month follow-up (T2) between both intervention groups.
- Evaluate if the MIST-ED can be an ecologically valid instrument which can be used to assess the acquisition of knowledge and skills through a family members intervention.

### **T83**

## **Investigation of Intuitive Eating with Patients in an Eating Disorder Inpatient Treatment**

### **Program: A Two-Year Prospective Study**

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In 1995 the book, *Intuitive Eating*, by Evelyn Tribole and Elyse Resch was published. This book proposed an alternative approach to maintaining physical health for those stuck in the cycle of repeated, ineffective, and damaging yo-yo dieting. Intuitive eating is characterized by eating based on physiological hunger and satiety cues rather than situational and emotional cues. Several psychologists, nutritionists, and health science professionals have argued that this style of eating is adaptive and research studies have shown that it is associated with positive self-esteem, body image, and weight maintenance and/or loss, as well as reduced cardiovascular risk and greater pleasure and less anxiety associated with eating. Nevertheless, there is limited evidence concerning the effectiveness of intuitive eating with eating disorder patients. Controversy exists in the eating disorders field concerning the question of whether it is possible for patients with eating disorders to learn how to eat intuitively, and whether attempting to teach this skill is helpful or harmful. We recently completed a two-year prospective study where we evaluated whether teaching intuitive eating to patients in an eating disorder inpatient treatment program was effective. Standardized measures of intuitive eating and eating disorder and psychiatric symptoms were administered to patients at admission, mid-way through treatment, and at discharge. Dietitians also rated patients on compliance with dietary requirements and on the degree to which they were using the skill of intuitive eating. Findings indicate that patients can develop the skill of intuitive eating, and that the ability to eat intuitively is associated with positive treatment outcomes. We also offer cautions concerning contraindications for intuitive eating and recommendations about how to implement intuitive eating training safely and effectively in inpatient treatment programs.

#### **Learning Objectives:**

- Describe the concept of intuitive eating and how it has been implemented as a treatment intervention on an eating disorder inpatient treatment program.
- Describe research findings from a two-year prospective study of an intuitive eating intervention in an eating disorder inpatient treatment program.
- Discuss indications and contraindications for the use of intuitive eating interventions in the treatment of eating disorders.

#### **T84**

### **Zonisamide in Treatment of Bulimia Nervosa: A Single-Center, Open label, Flexible-Dose Study in Outpatients**

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**Objective:** Bulimia nervosa (BN) is a condition similar to binge eating disorder (BED) and it is often associated with mood disorders. Zonisamide is an antiepileptic drug that was superior to placebo in reducing binges in BED in a placebo-controlled trial and it might have tymoleptic properties. The purpose of this study was to assess preliminarily the effectiveness of zonisamide in BN. **Method:** This is an open-label, prospective, 12-week, flexible dose study of zonisamide in BN. The primary outcome is binge-purge episode frequency. **Results:** Upon completion of data analysis, this abstract can be updated. The primary outcome measure will be the weekly frequency of binge-purge episodes (defined using DSM-IV-TR criteria, and assessed via clinical interview and review of subject take-home diaries at each study visit). Secondary outcome measures will include weekly frequency of binge-purge days (days when there were one or more binge-purge episodes); body mass index; Clinical Global Impression-severity scores, The Yale-Brown-Cornell Eating Disorder Scale total and subscales scores, and Hamilton Depression Rating Scale total scores. Other secondary efficacy measures will be response categories based on percentage decrease in frequency of binges-purges from baseline to endpoint and defined as follows: remission=cessation of binge-purge episodes; marked=75-99% decrease; moderate=50-74% decrease; and none=less than 50% decrease.

#### **Learning Objectives:**

- Understand the scientific rationale behind testing zonisamide in the treatment of bulimia nervosa.
- Describe general pharmacological properties of zonisamide
- Evaluate the safety and efficacy of zonisamide in the treatment of bulimia nervosa.