

## Poster Session

April 27 / 3:00 – 7:00 p.m.  
Poster Session Set-Up

April 28 / 8:30 a.m. – 5:30 p.m.  
Poster Session Viewing

April 28 / 5:30 – 7:00 p.m.  
Poster Session Presentations (authors presentation)

April 30 / 10:00 a.m. – Noon  
Poster Session Dismantle

## BED and Obesity

1

### **Binge Eating Sucrose Increases DeltaFosB Expression in the Nucleus Accumbens**

Nicole Avena, PhD, University of Florida, Gainesville, FL; Miriam Bocarsly, BA, Princeton University, Princeton, NJ; Deanna Wallace, PhD, University of California, Berkeley, Berkeley, CA; John Muschamp, PhD, Harvard Medical School, Belmont, MA; Eric Nestler, MD, Mount Sinai Medical Center, New York, NY; Bartley Hoebel, PhD, Princeton University, Princeton, NJ

Repeated daily bingeing on sucrose has been shown to produce behavioral and neurochemical changes that are similar to the effects of some drugs of abuse. In the present study, we tested whether binge access to sucrose would affect expression of the transcription factor DeltaFosB in the nucleus accumbens (NAc), a key brain reward region. DeltaFosB is the product of an immediate early gene expressed in response to drugs of abuse and repeated access to other rewarding substances or activities. In order to determine the persisting effects of binge eating on DeltaFosB accumulation, we measured it 1 month after the sucrose had been removed. Animals were fed water *ad libitum* and maintained on (1) binge (12-h) access to 10% sucrose (w/v) and chow, (2) *ad libitum* access to 10% sucrose (w/v) and chow, or (3) *ad libitum* access to chow. After 21 days of access, immunohistochemistry revealed that rats that had been bingeing on sucrose showed increased DeltaFosB immunoreactivity in the NAc compared to both control groups ( $p < 0.05$ ). After 1 month of sucrose deprivation, DeltaFosB immunoreactivity was not different among the groups. These findings suggest that binge eating of sucrose activates reward-related gene expression in the NAc.

2

### **Eating Behavior, Family Relationships and Self-injurious Behavior in Overweight Adolescents**

Ana Sofia Azevedo, graduation, University of Minho, Braga; Sónia Gonçalves, PhD, University of Minho, Braga; Henedina Antunes, PhD, Hospital de Braga; School of Health Sciences - University of Minho, Braga

The purpose of this study is to understand the eating behavior, family relationships and the practice of self-injurious behavior in a sample of overweight adolescents. The sample is constituted by 100 overweight adolescents accessed in the consultation of Pediatric Gastroenterology and Nutrition Unit, Hospital of Braga - Portugal, and 96 not overweight adolescents, from two private educational institutions. Instruments were used to determine the demographic characteristics of adolescents, their eating behavior (EDE-Q, Fairburn & Cooper, 2000), quality of family relationships (QRPE, Bastin & Delrez, 1976) and to characterize the practice of self-injurious behavior (SIQ-TR, Claes & Vandereycken, 2007). It was found that overweight adolescents have more dysfunctional eating behaviors, including restriction and greater food, weight and shape concerns, as well as a perception of excessive physical exercise and higher risk for binge eating. Regarding to the family, is also the overweight adolescents who have a less positive perception of their family environment, such less consistent and perceiving the relationship with their mother and father as a lower quality, compared with their peers without overweight. In addition, these adolescents are more likely to have overweight parents. With regard to self-injurious behavior, the 81 adolescents who practicing those behaviors, 49 belong to the overweight adolescents group. In sum, overweight adolescents have greater dysfunction eating behavior, a lower quality of family relationship and a greater practice of self-injurious behavior.

3

### **Comparison in a Natural Setting of a High-Negative-Affect and a Low-Negative-Affect Group of Overweight/Obese Women on Eating, Psychological, and Motivational Variables, and on Weight Loss Outcome**

Marie-Pierre Gagnon-Girouard, PhD, School of Psychology, Laval University, Quebec City, QB; Catherine Bégin, PhD, School of Psychology, Quebec City, QB; Sarah DeGranpré, BA, School of Psychology, Laval University, Quebec City, QB

As obesity affects a significant part of the adult population, it is statistically impossible to consider it as a uniform condition, and overweight/obese individuals seem to rather form a highly heterogeneous group. Particularly, it has been demonstrated that overweight/obese women characterized by high negative affect (HNA) exhibit poorer quality of life, more severe eating behaviors and body related worrying, and an increased vulnerability to overeating (Gagnon-Girouard et al., in press; Jansen, et al, 2008a; Jansen, et al, 2008b). This project aims to replicate these results in a natural setting sample composed of 45 overweight/obese women who are trying to lose weight on their own and to expand them by comparing the HNA and the LNA group on personality and motivational constructs as well as on weight loss outcome. To participate, women had to have initiated by themselves, less than a month ago, a concrete action to lose weight. At their first visit, they answered questionnaires and were weighted every week over a 2-month period. The HNA women reported having started worrying about their weight ( $p < .01$ ) and trying to lose weight ( $p < .01$ ) earlier than LNA women. They also reported more severe disinhibition ( $p < .001$ ) and susceptibility to hunger ( $p < .001$ ), and poorer body esteem ( $p < .01$ ) and self-esteem ( $p < .001$ ). The HNA group also obtained lower scores of self-directedness ( $p < .001$ ) and cooperativeness ( $p < .001$ ), and showed less integrated motivation ( $p < .05$ ) and more introjected motivation ( $p < .05$ ) toward the regulation of their eating behaviors. Finally, they reported a smaller weight loss after two months ( $p < .05$ ) than the LNA group. Groups did not differ on initial body weight. These results strengthen the idea that NA among overweight/obese women is an indicator of clinical severity and propose that these women may respond less easily to weight-loss efforts because of greater severity of eating difficulties and underlying differences on personality and motivation.

#### **4 Psychosocial and Familial Functioning in Adolescent Girls at Risk for Obesity with Loss of Control Eating**

*Brittany E. Matheson, BS, National Institutes of Health and the Uniformed Services University, Bethesda, MD; Rachel Miller, MA, Uniformed Services University of the Health Sciences, Bethesda, MD; Anna Vannucci, BA, Uniformed Services University of the Health Sciences, Bethesda, MD; Omni Cassidy, BA, National Institutes of Health and the Uniformed Services University, Bethesda, MD; Robyn Osborn, PhD, Uniformed Services University of the Health Sciences, Bethesda, MD; Lauren Shomaker, PhD, National Institutes of Health, Bethesda, MD; Marian Tanofsky-Kraff, PhD, Uniformed Services University of the Health Sciences, Bethesda, MD*

Eating disorders are frequently associated with poor psychosocial functioning and strained familial relationships. However, there is limited research on the relationship between disordered eating and social functioning in youth at-risk for obesity and binge eating disorder. Moreover, few studies have examined differential domains of social functioning in relation to disordered eating. We therefore evaluated the domains of friends, school, and familial psychosocial functioning in 88 adolescent girls ( $15.1 \pm 1.6$  y; range 12–17 y) prior to participation in an excess weight gain prevention program. By design, all girls were at risk for obesity as determined by a body mass index, BMI, between the 75th and 97th percentile ( $26.7 \pm 2.9$ , kg/m<sup>2</sup>), and all girls reported  $\geq 1$  loss of control (LOC) eating episode in the past month on the Eating Disorder Examination (EDE). Eating disorder psychopathology was assessed with the EDE, and social functioning was assessed with the Social Adjustment Scale - Self-Report (SAS-SR). On average, girls reported 3.9 (SD=4.4) LOC episodes (range 1–23) in the past month. In analyses adjusted for the contribution of BMI z-score, the SAS-SR friends subscale was associated with frequency of LOC episodes ( $r = .30$ ,  $p < .01$ ) and EDE eating and shape concern, and global scores ( $r_s = .22$  -  $.37$ ,  $p_s \leq .05$ ). Family social functioning was associated with all EDE scores ( $r_s = .26$  -  $.31$ ,  $p_s < .05$ ), except weight concern ( $r = .18$ ,  $p = .12$ ). The SAS-SR school subscale was only related to EDE restraint ( $r = .25$ ,  $p < .05$ ). These findings suggest that difficulties in psychosocial functioning, particularly in relation to friends and family, are associated with exacerbated eating disorder psychopathology among adolescent girls who are at-risk for obesity and who report LOC eating patterns. Interventions with a specific focus on improving relationships among friends and family members may play a role in reducing disordered eating behaviors and preventing full-syndrome eating disorders.

#### **5 Parental Behavior Related to the Eating Behavior and Weight Status of Children During a Standard Mealtime**

*Julie A. Vandewalle, Master in Psychology, Ghent University, Ghent; Ellen Moens, PhD, Ghent University, Ghent; Caroline Braet, Ghent University, Ghent*

When examining feeding situations, both feeding styles and strategies should be measured. This study examines the difference between parental feeding styles and strategies measured by questionnaires and parental feeding styles and strategies measured by observation and explores the relationship between both concepts. Thirty-six mothers and seventy-two children between the age of four and twelve participated in this study. Questionnaires filled in by the mother, were used to measure the feeding styles and strategies. In addition, both concepts were also measured by observing the interaction between mother and child during a standard meal. The results show that more feeding styles low on parental demandingness were observed during the standard meal than mothers reporting these feeding styles through questionnaires. Secondly, a positive correlation between the feeding strategy pressure to eat and the dimension parental

demandingness was found through questionnaires. Negative correlations between the feeding strategies pressure to eat and restriction and the dimension parental responsiveness were found as well. On the contrary, through observation a positive correlation was found between the feeding strategy restriction and the dimension parental demandingness. Further, a negative correlation was found between the feeding strategy restriction and the dimension parental responsiveness. Firstly, the results suggest that mother's report of feeding style differs from the direct observation of mother's feeding style, which emphasizes the importance of using multi-method design. Secondly, the results suggest that restriction does correlate with the dimension parental demandingness. This could indicate that the feeding strategy restriction can be measured more accurately through observation compared to questionnaires.

## 6

### **Physical Activity Leaders (PALS) Mentoring Program for Decreasing Obesity in Children and Adolescents**

*Leah R. Kamin, BA, Pacific University School of Professional Psychology, Hillsboro, OR; Shellie Jervis, BS, Pacific University, Beaverton, OR; Daniel Munoz, PhD, Pacific University, Hillsboro, OR; Erin Jobst, PhD, Pacific University, Hillsboro, OR; Rebecca Reisch, DPT, Pacific University, Hillsboro, OR; Joan B. Fleishman, MS, Pacific University, Hillsboro, OR*

The purpose of the present study is to present a case series of the Physical Activity Leaders (PALS) mentoring program for decreasing obesity in children and adolescents 6 to 16 years of age with a BMI  $\geq$  85<sup>th</sup> percentile. The project, a collaboration between graduate physical therapy and professional psychology programs, is designed to decrease weight through collaborative physical activity behaviors and psychological intervention. Participants are enrolled in a six-month intervention in which they receive support in identifying physical, psychological, and behavioral impediments to engaging in physical activity. Pre-intervention assessments include the Child Behavior Checklist and the Children Eating Disorder Examination. The study requires participants to meet individually with a physical therapy student for 1-hr each week to engage in physical activity. Participants will also meet with a clinical psychology student once a month. Each monthly 1-hr session will incorporate a specific theme including: introducing Behavior and Mood diaries, breaking down tasks, reinforcing positive behaviors, self-care/managing emotions, planning for a healthy life, and wrap up and review of the program. In addition to presenting the case series, the present study will discuss issues of feasibility and sustainability of the PALS intervention.

## 7

### **Binge Eating in Adolescents with Polycystic Ovary Syndrome**

*Dana L Rofey, PhD, University of Pittsburgh School of Medicine, Pittsburgh, PA; Stefanie Weiss, MA, Children's Hospital of Pittsburgh, New York, NY; Ronette Blake, MS, University of Pittsburgh School of Medicine, Pittsburgh, PA; Silva Arslanian, MD, University of Pittsburgh School of Medicine, Pittsburgh, PA*

Polycystic Ovary Syndrome (PCOS) is a common endocrine disorder in adolescent females that is associated with obesity, irregular menses, hyperandrogenism, and insulin resistance. Other medical disorders with underlying metabolic etiology (e.g., diabetes) have been associated with excessive caloric intake, loss of control episodes, and sadness/guilt over binge eating. The present study was conducted to determine whether aberrant eating patterns occur more frequently in adolescents with PCOS than in age-, race-, and BMI percentile-matched controls without PCOS. Twenty-three obese adolescents (BMI percentile > 95; 12-19 years-old; ~90% White) with PCOS, confirmed by a board-certified pediatric endocrinologist, were matched by age, race, and BMI percentile to 23 overweight adolescents with no diagnosed medical co-morbidities. Each participant filled out the Questionnaire for Eating and Weight Patterns-Revised (QEWPR), a reliable and valid measure assessing Binge Eating Disorder. Contrary to our hypothesis, adolescents with PCOS did not exhibit higher rates of binge eating. While differences between groups were not statistically significant, there was a trend toward more binge eating in control participants compared to adolescents with PCOS,  $t(22)=-2.0, p=.064$ . Although previous data reveal that adolescents with endocrine disorders display more aberrant eating patterns, adolescents with PCOS show fewer binge eating tendencies. A larger sample including physiological parameters and a more sensitive instrument assessing loss of control episodes are warranted.

## 8

### **Pediatric Loss of Control Eating in the Laboratory: Energy Intake during Normal and Binge Meals in African American and Caucasian Children**

*Omni L Cassidy, BA, National Institutes of Health/Uniformed Services University, Bethesda, MD; Anna Vanucci, BA, Uniformed Services University of the Health Sciences, Bethesda, MD; Robyn Osborn, PhD, Uniformed Services University of the Health Sciences, Bethesda, MD; Brittany Matheson, BS, National Institutes of Health/Uniformed Services University, Bethesda, MD; Merel Kozlosky, MS, National Institutes of Health, Bethesda, MD; Lauren Shomaker, PhD, National Institutes of Health, Bethesda, MD; Susan Yanovski, MD, National Institutes of Health, Bethesda, MD; Marian Tanofsky-Kraff, PhD, National Institutes of Health/Uniformed Services University of the Health Sciences, Bethesda, MD*

There are data to suggest that loss of control (LOC) eating is more commonly reported by African American (AA) compared with Caucasian (C) youth. LOC eating is a risk factor for excessive weight gain. Thus, differences in LOC eating patterns may be a contributing factor to the disproportionate rate of obesity among AA. To fill a notable gap in the literature, we therefore studied the effects of race and reported LOC eating on observed energy intake at laboratory test meals in a nonclinical sample of 73 AA and 111 C girls (48%) and boys (8-18y,  $M \pm SD$  12.9 $\pm$ 2.8y; BMI-z .95 $\pm$ 1.2). Using the Eating Disorder Examination, youth were categorized by the presence or absence of LOC in the past month. Results indicated that there were no racial differences in the prevalence of reported LOC: of those who reported LOC, 37% were AA (63% C;  $p$ =ns). Children underwent 2 test meals in which they ate *ad libitum* from a multi-item food array. Six hours after a standardized breakfast, children were instructed to: binge-eat ("let yourself go and eat as much as you want") or eat normally ("eat as much as you would at a normal meal") in random order on separate days. Accounting for the contribution of sex, age (y), socioeconomic status, fat mass (%), fat-free mass (kg), height (cm), LOC, and meal instruction, AA children consumed more energy (kcal) than C children ( $p$ =.001). There was also a significant race by LOC interaction, such that AA children with LOC consumed the most total energy, relative to both C children with LOC and all youth with no LOC ( $p$ =.005). There were no significant effects on any macronutrients (protein, fat, carbohydrate) by race. These findings suggest that the excess energy consumed by AA youth with LOC may contribute, in part, to the high rate of obesity observed in AA. Given the cross-sectional and prospective relationship between LOC and body weight, future investigation is required to understand the biological and cultural underpinnings of LOC eating among AA youth.

## 9

### **Body Size Perceptions and Preferences of Black and White Girls**

*Nichole R Kelly, MS, Virginia Commonwealth University, Richmond, VA; Suzanne Mazzeo, PhD, Virginia Commonwealth University, Richmond, VA; Cynthia Bulik, PhD, University of North Carolina, Chapel Hill, Chapel Hill, NC*

Body dissatisfaction is evident in girls as young as six. Figure rating scales may be a valid approach to assessing body dissatisfaction among young, racially diverse girls. However, little is known about their use in obese girls seeking weight loss treatment. This study assessed racial differences in the body size perceptions and preferences of 87 overweight ( $M_{BMI}$  = 98%) girls (ages 6-11, 66% Black, 34% White) participating in a weight loss trial. Participants were presented nine silhouette drawings ranging from very thin to very heavy. Racial differences in body size perceptions, preferences, and dissatisfaction were explored via independent samples t-tests. Body dissatisfaction did not differ between Black and White girls; only one girl from the entire sample was satisfied with her body (i.e., selected the same figure as her perceived and ideal one). All other participants preferred a smaller body size than their current one. Statistical trends suggest that Black girls' BMI percentiles were slightly higher than those of White girls, and they rated their current body size as larger. Black girls also endorsed a larger body size preference than their White peers. Most girls underestimated their body size, as the most frequently endorsed silhouette was in the middle range of those presented (although  $M_{BMI}$  = 98%). These findings are consistent with previous research suggesting that overweight girls underestimate their body size. Outcomes add strength to the emerging argument that, despite an overall cultural preference for a larger body size, obesity might mitigate factors that purportedly protect Black girls from body dissatisfaction. Future research is needed to gain a better understanding of children's body-related mental representations, including their development over time, to inform the proper assessment of body satisfaction in youth.

## 10

### **The Examination of Loss of Control Over Eating Among Bariatric Surgery Candidates Related to Depressed Mood, Psychological Distress and Impact of Weight on Quality of Life**

*Dawn Eichen, MA, Temple University, Philadelphia, PA; Karla Fettich, MA, University of Chicago, Chicago, IL; Eunice Chen, PhD, University of Chicago, Chicago, IL; Michael McCloskey, PhD, Temple University, Philadelphia, PA*

Loss of control (LOC) eating disorder has been proposed as a potential eating disorder for consideration of DSM-V. The aim of this study is to examine psychological differences between severely obese bariatric surgery patients reporting loss of control versus those not reporting loss of control. This study utilized data of 441 individuals (75% female; 52% Caucasian; 39% African American) who sought bariatric surgery in Chicago between July 2007 and August 2010. Questionnaires (Eating Disorders Examination Questionnaire [EDE-Q], Beck Depression Inventory [BDI-II], Brief Symptom Inventory [BSI] and Impact of Weight on Quality of Life-Lite [IWQOL-Lite]) were administered online prior to an in-person multidisciplinary assessment conducted before surgery.

Results indicated that 48% of individuals reported LOC over eating. T-tests demonstrated individuals with LOC reported experiencing higher levels of psychopathology. Specifically, individuals who reported LOC experienced significantly more depressed symptoms ( $M=14.67$ ,  $SE=.66$ ), than individuals who didn't report LOC ( $M=7.05$ ,  $SE=.47$ ),  $t(430)=-6.56$ ,  $p<.001$ . Likewise, individuals with LOC experienced significantly more psychological distress ( $M=.41$ ,  $SE=.0091$ ) than those with no LOC ( $M=.35$ ,  $SE=.0075$ ),  $t(429)=-5.16$ ,  $p<.001$ . Lastly, individuals with LOC reported their weight had a significantly greater impact on their quality of life ( $M=99.43$ ,  $SE=1.50$ ) than individuals without LOC ( $M=84.05$ ,  $SE=1.57$ ),  $t(430)=-7.05$ ,  $p<.001$ .

Many severely obese clients presenting for bariatric surgery report overeating but it is unclear if this is disordered eating.

However, only about half report experiencing LOC. Individuals who experience a LOC over eating report greater depressed mood, psychological distress and that weight has a greater impact on their quality of life. Findings from this study support consideration of LOC as an eating disorder.

## 11

### **The Developmental Trajectory of Obese Men and Women with Binge Eating Disorder and the Metabolic Syndrome**

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The metabolic syndrome (MetSyn), characterized by vascular symptoms, is highly correlated with obesity, weight-related medical diseases and mortality, and has significantly increased alongside obesity in the U.S. Little is known about the distribution of MetSyn in obese patients with binge eating disorder (BED) or its associations with different developmental trajectories of dieting, binge eating, and obesity problems. This study examined the frequency of MetSyn and explored the developmental histories of obese patients with BED. A consecutive series of 120 treatment-seeking obese men and women with BED were administered structured clinical interviews and completed self-report questionnaires at intake for treatment at a specialty clinic. Forty-seven percent ( $n=48$ ) met criteria for MetSyn. Participants with MetSyn did not differ from those without MetSyn on gender, ethnicity, age, or BMI. Participants with MetSyn reported a significantly older age at BED onset ( $M=30.7$ ,  $SD=13.6$ ) compared to those without MetSyn ( $M=24.2$ ,  $SD=12.9$ ;  $F(1,94)=5.78$ ,  $p=0.018$ ) as well as a significantly longer time between their first binge and when they met full criteria for BED ( $F(1,90)=5.24$ ,  $p=0.024$ ). Participants with MetSyn also reported a shorter duration of BED ( $M=16.3$ ,  $SD=13.3$ ) compared to those without MetSyn ( $M=24.4$ ,  $SD=13.4$ ;  $F(1,92)=8.55$ ,  $p=0.004$ ). Logistic regression revealed that age of BED onset significantly predicted MetSyn after controlling for current BMI ( $OR=1.04$ ,  $CI=1.01-1.08$ ,  $p=0.012$ ). Participants with MetSyn did not differ from those without MetSyn on age at diet or overweight onset, total lifetime diets, current binge frequency, disordered eating psychopathology, or dietary restraint. Our findings suggest that MetSyn is associated with a distinct developmental trajectory, which, surprisingly, is associated with a later onset and shorter BED duration. Prospective studies should explore causal connections in the development of the MetSyn in relation to BED onset.

## 12

### **Food Insecurity, Depressive Symptoms, and Binge Eating in Mexican-American Women**

*Julia L Austin, MS, University of New Mexico, Albuquerque, NM; Julia Austin, MS, University of New Mexico, Albuquerque, NM; Katy Belon, BS, University of New Mexico, Albuquerque, NM; Marita Campos-Melady, MS, University of New Mexico, Albuquerque, NM; Loren Gianini, MS, University of New Mexico, Albuquerque, NM; Jane Ellen Smith, PhD, University of New Mexico, Albuquerque, NM*

**Introduction:** Previous research has linked food insecurity (lack of stable access to nutritious food) to binge eating in ethnic minority women. However, given the established relationship between negative affect and binge eating, along with evidence that food insecurity may be linked to depressive symptoms in ethnic minority populations, it is possible that depressive symptoms may account for the observed relationship between food insecurity and binge eating. As such, we explored whether depressive symptoms mediated the relationship between food insecurity and binge eating symptoms in a community sample of Mexican-American women. **Method:** 100 Mexican-American overweight or obese (BMI 25-40) women ages 20 to 65 enrolled in a 16-session group weight loss treatment participated in the study. At intake, women were given a set of measures, including the Beck Depression Inventory-II (BDI-II), the Binge Eating Scale (BES), and the USDA Food Insecurity Scale, which were used for the current study analyses. **Results:** Following Baron and Kenny's (1986) steps of mediation, food insecurity was related to the mediator (depressive symptoms),  $r(99)=.38$ ,  $p<.001$ , depressive symptoms were related to the dependant variable (binge eating),  $r(99)=.43$ ,  $p<.001$ , and the independent variable (food insecurity) was related (marginally) to binge eating,  $r(100)=.18$ ,  $p<.10$ . Providing support for mediation, the marginal relationship between food insecurity and binge eating became non-significant when depressive symptoms was added to the model,  $r(96)=.02$ , n.s. **Discussion:** This study provides insight into the relationship between food insecurity, depressive symptoms, and binge eating in Mexican-American women and provides preliminary support for the notion that the relationship between food insecurity and binge eating could be accounted for by depressive symptoms. Future research should gather a larger, more ethnically diverse sample to further explore these relationships.

## **Biology & Medical Complications**

13

### **Serum BDNF, Serum Glutamate and Decision Making Ability in Women Suffering from Eating Disorders**

*Michiko Nakazato, MD, PhD, Chiba University Hospital, Chiba; Chihiro Sutoh, MD, Chiba University Graduate School, Chiba; Shigenori Tadokoro, MD, Chiba University Graduate School of Medicine, Chiba; Daisuke Matsuzawa, MD, PhD, Chiba University Graduate School, Chiba; Kadushi Tsuru, MA, Chiba University Graduate School of Medicine, Chiba; Eiji Shimizu, MD, PhD, Chiba University Graduate School, Chiba; Osamu Kobori, PhD, Chiba University, Chiba; Tamaki Ishima, BS, Chiba; Kenji Hashimoto, PhD, Chiba; Masaomi Iyo, MD, PhD, Chiba University Graduate School of Medicine, Chiba*

**BACKGROUND:** Little is known about serum concentrations of brain-derived neurotrophic factor (BDNF), glutamatergic amino acids and decision making abilities in patients with ED. The aim of this study was 1) to examine serum concentrations of BDNF, serum glutamatergic amino acids in patients with ED, 2) to investigate if there was any association with decision making abilities. **METHODS:** Serum concentrations of BDNF, glutamine, glutamate, glycine were measured in 18 patients with AN, 20 patients with BN, and 28 age-matched healthy women. The participants completed neuropsychological testing measuring decision making ability using the Iowa-Gambling Task (IGT). The participants completed the Eating Disorders Inventory-2 (EDI-2), the Eating Disorder Examination Questionnaire (EDEQ), the Hospital Anxiety and Depression Scale (HADS), and the Maudsley Obsessive-Compulsive Inventory (MOCI), respectively. **RESULTS:** Serum concentrations of glutamate in the AN group were significantly lower than those in the HC group ( $p=0.007$ ). Serum concentrations of glutamate in the BN group were significantly lower than those in the HC group ( $p=0.002$ ). Serum BDNF concentrations in the AN group were significantly lower than those in the HC group ( $p=0.003$ ). In the AN group, there was a positive correlation between serum BDNF concentrations and BMI ( $p=0.015$ ), EDEQS ( $p=0.021$ ). There was a negative correlation between serum glutamine concentrations and IGT ( $p=0.024$ ). In the total subjects, there was a positive correlation between serum BDNF concentrations and IGT ( $p=0.027$ ). **CONCLUSIONS:** Decreased serum glutamate concentrations may be related to the pathophysiology of ED. Serum BDNF concentration, serum glutamatergic neurotransmission may be linked to changes in decision making abilities.

## **Body Image**

14

### **Factors Associated with Body Image Concerns among Australian Male and Female Children in the Transition from Primary to Secondary School**

*Fernanda Timerman, MEd by Research, São Paulo; Jennifer O'Dea, PhD, University of Sydney, Sydney*

There is an absence of long-term studies assessing adolescent eating behaviours and body image concerns in the transition from primary to secondary school. This study explored Australian children's body image and body weight perceptions, physical self-esteem, nutritional knowledge and breakfast scores as well as other meal patterns to examine if and how they change as the adolescent becomes older and begins secondary school. A quantitative questionnaire was distributed in 16 Catholic secondary schools in NSW. The results are presented in 3 sections. The first section analyses the results from 170 students from year 6 and 130 students from year 7 in 2008. Section 2 compares gender differences in each year. Section 3 explores the change within a longitudinal cohort of participants (130) from year 6 in 2007 to year 7 in 2008. Results showed that more than half of females desired their weight to be lighter, especially after the transition to secondary school. There was no clear worsening body weight perception in secondary school. What became markedly poorer in the transition to secondary school was the body image perception of females and the physical self esteem and breakfast scores of both males and females. In general, males had higher physical self esteem scores, except for the father score, which they rated lower in secondary school. Males also chose larger figures as ideal compared to females and females had higher body dissatisfaction. Female participants' skipped breakfast more than males and the least skipped meal between both genders was dinner. The results of the current study contribute to the longitudinal knowledge about adolescent weight perception and body image.

## **Children & Adolescents**

15

### **Motivational Stage of Change in Children and Adolescents in a Family-Centered Partial Hospital Program for Eating Disorders**

*Rollyn M Ornstein, MD, Penn State Hershey Medical Center, Hershey, PA; Lisa Bustin, BA, Penn State College of Medicine, Hershey, PA; Susan Lane-Loney, PhD, Penn State Hershey Medical Center, Hershey, PA; Christopher Hollenbeak, PhD, Penn State College of Medicine, Hershey, PA*

The purpose of this study was to examine how motivation to change progresses over the course of treatment and also to determine if components of the Motivational Stages of Change for Adolescents Recovering from an Eating Disorder (MSCARED) questionnaire were predictive of outcome in patients admitted to a family-centered partial program for youth

with eating disorders (EDs). A retrospective chart review of 61 patients admitted to the program between August 2008 and November 2009 was performed. Historical data, anthropometric variables, and scores from the Children's Eating Attitudes Test (ChEAT) were collected on admission and at discharge. The MSCARED was completed at both time periods as well, by patients and parents. After exclusion, 30 patients were available for statistical analysis, which included student's paired t-tests and Pearson's correlation coefficients. The cohort was 87% female with a mean age of  $12.8 \pm 2$  years. Anorexia nervosa was diagnosed in 33% and ED NOS in 60% of the patients. The stage of change (SOC) on the MSCARED (ranging from 1 to 6) significantly progressed over the course of treatment ( $p < 0.0001$ ), with a mean difference of  $1.9 \pm 1.3$ . The change in the SOC was significantly correlated with the change in the total ChEAT score ( $r = -0.56$ ,  $p = 0.001$ ), but not with the change in weight parameters. The initial SOC was not predictive of clinical improvement. There was a significant difference from intake to discharge in how strongly patients rated the pros vs. the cons of changing ( $p = 0.02$ ), and this was correlated with their SOC ( $r = 0.72$ ,  $p = 0.0003$ ). Length of stay, age, and psychiatric co-morbidity were not associated with the difference in the SOC over treatment. In conclusion, the MSCARED may be a useful tool as it correlates with young ED patients' psychological improvements with treatment, but the initial SOC may not be predictive of treatment outcome in young patients.

## 16

### **Patient Satisfaction among Youth, and their Parents, Receiving Family Based Treatment for an Eating Disorder**

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Although patients receiving medical treatment are generally satisfied with the treatment they receive, the treatment of youth struggling with eating disorders is unique. Treatment is largely imposed upon them, the eating disorder is valued, and a number drop out of treatment prematurely. Few studies have considered patient satisfaction with treatment for an eating disorder, and even fewer have considered satisfaction with Family Based Treatment. The present study assessed patient and parent satisfaction with a pediatric eating disorders outpatient program at an academic teaching hospital, and determined correlates of satisfaction. Factors considered as possible correlates for both patient and parent satisfaction included those related to the patient (e.g. age; diagnosis; symptom severity; comorbidity; substance abuse), the family (e.g. one or two parent family; parent mental health), and treatment (e.g. physical distance and travel time to hospital; FBT phase of treatment; degree of patient autonomy regarding food selection, consumption, and exercise; proportion of FBT, relative to individual, treatment provided; provision of adjuncts to treatment; key issues addressed in therapy; therapeutic challenges). Forty-seven patients, and their parents, completed the Client Satisfaction Questionnaire. Patients, parents, physicians, and therapists completed questionnaires related to each of the factors listed above. Results indicated that two parent families and those who had less travel time were more satisfied with treatment. The greater the severity of youth's bingeing, purging, restriction and physical activity, the less satisfied youth and parents were. When youth had greater autonomy regarding their nutrition and were closer to their target weight, parent satisfaction greater. Youth who were permitted greater levels of physical activity reported greater satisfaction. Treatment providers were quite accurate in their perceptions of patient and parent satisfaction.

## 17

### **Adolescent Dating and Disordered Eating: Are Young Girls Especially at Risk?**

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Adolescent dating has been associated with a number of negative psychosocial outcomes such as low achievement and depression, and these relationships may be especially strong for younger adolescents. According to the developmental appropriateness hypothesis, adolescents who engage in novel behaviors at an earlier age than their peers are at risk for maladjustment. In fact, some research suggests that dating is a risk factor for depression among younger, but not older, adolescents. The purpose of this study was to investigate the developmental appropriateness hypothesis as it relates to dating and disordered eating. We hypothesized that dating would be a risk factor for disordered eating symptoms among younger, but not older, adolescents. Participants included 75 girls, aged 12-19 (25 with an eating disorder, 25 with a mood disorder, and 25 healthy controls). Dating was assessed on an 8-point Likert scale ranging from "not dating now" (1) to "married" (8). Eating disorder symptoms were assessed using three subscales of the Eating Disorder Inventory—2: bulimia, drive for thinness, and body dissatisfaction. Multiple regression analyses were performed on eating disorder symptoms entering pubertal status and group (i.e., eating disorder, mood disorder, and control) as covariates. Results revealed that across the entire sample, dating was significantly associated with bulimic symptoms ( $p < .001$ ) but not drive for thinness or body dissatisfaction. There was also a significant interaction between dating and age on bulimic symptoms

( $p < .01$ ) but not on drive for thinness or body dissatisfaction; younger girls who were dating reported greater symptoms of bulimia. These findings provide partial support for the developmental appropriateness hypothesis. Future research may employ a longitudinal design to investigate whether or not the effects of young dating on bulimic symptoms persist through adolescence.

## **18**

### **Trends Observed Across a Decade of Treating Youth with Eating Disorders in a Multidisciplinary Outpatient Treatment Program in a Rural State**

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The purpose of this study was to explore trends among patients presenting to an outpatient multidisciplinary child and adolescent eating disorders program over a period of ten years. An IRB approved chart review was performed and demographic, physical and psychological data collected at intake on 437 patients who presented to the eating disorders program over a ten-year period. Gender, age, ethnicity, diagnosis, weight, BMI, Bone density and Resting Energy Expenditure (REE), menses status. Number of patients each year ranged from 6 to 60 with peaks and valleys noted; 412 females, 25 males with increased male representation noted across years; age 5 to 21 with younger ages increasingly represented across years; ethnicity included Caucasian, African American, Hispanic, and Other with increased minority representation noted across years; 159 Anorexia, 43 Bulimia, 212 Eating Disorder NOS, 23 Other Diagnosis with peaks and valleys noted across years; BMI 12.0 to 36.9 with lower BMI's noted in more recent years; Bone Density Spine results ( $n=186$ ) ranged from -3.60 to 3.00 and Bone Density Body Fat percent ( $n=178$ ) ranged from 6.80 to 38.90 with lower results noted within the last five years; REE results ( $n=371$ ) ranged from 60 to 153 percent with the lower percent results noted within the last five years. Elevated symptoms of depression and anxiety as well as EDI scale elevations were noted across diagnoses and year. Observed trends are consistent with expectations and support trends noted in existing literature and illustrate eating disorders as progressively more nondiscriminatory with regard to age, gender, and ethnicity. Severity of illness may be trending towards worse at the time of first intervention indicating that patients are being identified and/or are presenting for treatment after symptoms have become significant.

## **19**

### **Fourteen Years of Treating Children and Adolescents with Eating Disorders: Family Satisfaction with Aspects of an Outpatient Multidisciplinary Treatment Team Approach and Influence of Satisfaction on Treatment Components**

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The purpose of this IRB approved study was to measure parents' level of satisfaction with each of the specific components of an outpatient multidisciplinary child and adolescent eating disorders program and to examine the influence of satisfaction levels among specific variables. A survey instrument based on an existing validated tool was developed by the authors and mailed to 261 families who had been or were currently being treated in the multidisciplinary eating disorders program since 1994. Fifty-four forms were completed and returned, reflecting a 21% return rate. High satisfaction was observed across treatment components. Strong correlations were observed among study variables. Notably, length of time in treatment did not correlate significantly with any of the other survey variables. Regression analyses were performed. Results revealed satisfaction with patient's treatment in general to be significantly influenced by satisfaction with patient's therapist ( $\beta = 0.51$ ;  $p = .000$ ); satisfaction with initial diagnostic evaluation ( $\beta = 0.28$ ;  $p = .02$ ) and satisfaction with physician ( $\beta = .25$ ;  $p = .04$ ). Satisfaction with length of treatment was significantly influenced by satisfaction with physician ( $\beta = 0.31$ ;  $p = .02$ ) and satisfaction with treatment in general ( $\beta = 0.30$ ;  $p = .05$ ). Satisfaction with the initial diagnostic evaluation was significantly influenced by satisfaction with the professionals involved in the diagnostic evaluation ( $\beta = 0.79$ ;  $p = .000$ ). Satisfaction with the professionals involved in the diagnostic evaluation had a significant influence on satisfaction with treatment in general ( $\beta = 0.35$ ;  $p = .01$ ). These results suggest that the comprehensive approach to the treatment of children and adolescents with eating disorders may have a positive effect on parental satisfaction with the program which could foster a commitment to their child or adolescent's treatment.

## **20**

### **Family Functioning and Relatives' Expressed Emotion in Adolescents with Early Eating Disorders**

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Parents of adolescents with eating disorders (ED) are aimed to participate actively in treatment, it could be useful to evaluate their emotional distress and family functioning. The FACES-II was used to measure Family Functioning (perceived cohesion and adaptability). Family Questionnaire (FQ) was used for expressed emotion (EE). A cut-off point of 23 for high EE-Criticism (EEC) and 27 for high EE-Over-involvement (EEOI) were used. A clinical sample of 50 female with 14.5 y. (SD = 1.4) and BMI of 16.1 (SD = 1.7) admitted to hospital with early-onset of illness (9 months, SD= 4.0). 100 parents (50 mothers 50 fathers) were collected. The majority of parents (85%) viewed their families as separated and structured ('mid-range'), only 12% fathers and 15.4% mother perceived their family functioning as 'extreme' category (disengaged and rigid). There were no significant differences between mother and father in EEC or EEOI. A 31% of fathers and 40% of mothers reached high levels of EE by CC, instead 57% of fathers and 64.4% of mothers presented high EE by EOI, but, there were no significant differences ( $p > 0.05$ ). There were no significant differences between type of family and EE either high levels for fathers and mothers respectively. Majority of families are at mid-range in self-perceived family functioning (separated and structured types). Which facilitate the implementation of family-based treatments in adolescents with eating disorders. The EOI component of expressed emotion is relevant at the onset of the illness, however, there is not specific by family functioning.

## 21

### **State Mandated Health Report Cards: Cues to Action? A Preliminary Case Study**

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Despite limited research, 7 U.S. states have enacted school-based Body Mass Index (BMI) screening and parent notification [i.e. Health Report Cards (HRCs)] in an effort to address childhood obesity. Using a Social Cognitive Theory based framework, a cross-sectional study of one FL school explored actions among 76 parents following state mandated HRC delivery among 6th grade students. Student BMI classification included 16% at-risk of overweight (AR), 12% overweight (OW), 71% normal weight (NW) and 1% underweight. Main findings reveal: a) 81% of the parents discussed the HRC with their child. Among those, 67% rated their child as being "very" or "somewhat" uncomfortable with the conversation (no significant difference was observed between NW and AR/OW children); b) 29% of parents of NW children and 81% of parents of AR and OW children reported taking action in response to the HRC. Actions included food restriction (NW=7%, AR/OW=44%), increased physical activity (NW=17%, AR/OW=75%), see a health professional (NW=10%, AR/OW=19%); c) Fisher's exact tests revealed parents of AR and OW children were significantly more likely to restrict their child's diet ( $p=.004$ ) and increase their child's physical activity ( $p<.001$ ) as compared with parents of NW children. Although findings from this preliminary study support the premise of HRCs (i.e., to serve as a parental "cue to action" when children are OW or AR), results depict both positive and negative parental actions. Subsequently, these actions may lead to inappropriate messages and unhealthy behaviors. Despite current study limitations, results suggest that weight-related information sent to parents without proper information and resources may limit the intended purpose of HRCs on childhood obesity. Implications include adapting and tailoring state mandated HRCs based on BMI category for promoting positive outcomes and preventing negative health consequences.

## 22

### **Examining the Differences in Expressed Emotion among Adolescents with Anorexia Nervosa and Bulimia Nervosa**

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Expressed Emotion (EE) is a construct used to understand the interaction between patients and their families. Previous research indicates that EE has been shown to be an effective predictor of treatment outcome and treatment dropout in anorexia nervosa (AN) and bulimia nervosa (BN). EE is measured along five subscales: critical comments (CC), positive remarks (PR), hostility (H), warmth (W), and emotional over-involvement (EOI). The purpose of this current research was to compare EE among families with an adolescent with AN and BN. The sample was comprised of 243 treatment seeking adolescents ages 12-19 ( $M=15$ ,  $SD=1.7$ ) who met DSM-IV criteria for AN ( $n=189$ ), although they did not have to meet the amenorrhea criterion for AN, and BN ( $n=54$ ). The Structured Clinical Family Interview (SCFI) was utilized from which EE ratings were made. Chi-square analysis indicated that BN and AN families differed significantly in that more BN families compared to their AN counterparts were *high EE* ( $X^2_{(1)}=6.91$ ,  $p=.009$ ). MANOVAs were used to compare families on EE subscales. The results revealed that the overall differences among groups was statistically significant, with BN fathers having made more CC compared to AN fathers ( $F(5,188)=57.56$ ,  $p<.001$ ). Similarly, BN mothers made more CC than AN mothers ( $F(5,238)=119.82$ ,  $p<.001$ ). No significant differences were found between mothers and fathers in the AN and BN groups on EOI, PR, H, or W. The results show that significantly more BN families were *high EE* and scored high on CC, which could have important implications for treatment outcome.

## 23

### **Self Silencing in a Community Sample of Adolescent Males**

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Purpose: To examine correlates of self-silencing behaviour and disordered eating in a community based adolescent male population. Sample & Methods: Participants and data were drawn from a larger cohort study that focused on body image disturbance, and disordered eating. For the purposes of this study, a sample of 769 adolescent males recruited from 15 community-based schools over a six year period was used. Study participation included in-class completion of questionnaires and assessment of body mass index. Questionnaires with focus on self-silencing behaviours, body image, eating attitudes and eating disorders were utilized. Summary & Results: Participants were divided into two cohorts for the purposes of analysis: 406 grade 7 and 8 male participants (mean age= 12.90) and 363 participants from grades 10 through 12 (mean age = 15.38). Overall, the correlation pattern between younger and older cohorts was similar. Significant positive correlations were found between Externalized Self Perception and Silencing the Self ( $p = .71$  (both cohorts),  $p < .001$ ), and between Internalization of Beauty Ideals and Eating Disorder Composite Scales ( $r = .0.40$  (younger);  $0.35$  (older),  $p < .001$ ). The Self-Silencing and Eating Disorder Composite Scores also demonstrated a significant albeit less pronounced positive correlation ( $r = .14$  (younger)  $0.17$  (older),  $p < .001$ ). Appearance Esteem demonstrated negative correlations with each of Externalized Self-Perception ( $r = -.44$  (younger);  $-0.49$  (older),  $p < .001$ ), Internalization of Beauty Ideals ( $r = -.37$  (younger);  $-0.36$  (older),  $p < .001$ ), Self-Silencing Behaviours ( $r = -.44$ , younger;  $-0.49$  (older),  $p < .001$ ) and Eating Disorder Composite Scores ( $r = -0.50$  (younger);  $r = -0.48$  (older),  $p < .001$ ) Adolescent males who are more externalized in self-perception are more likely to self-silence. As a result, the likelihood of internalizing normative male ideals as a result of vulnerability increases which in turn, attenuates a negative effect on appearance esteem. As societal messages of the "perfect" male body are internalized, the risk of disordered eating appears to intensify.

## 24 Psychosocial and Disordered Eating Symptomatology in Response to Familial and Peer Teasing in a Cohort of Obese Children

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Teasing is associated with increases in depression and disordered eating behaviors in overweight adolescents. However, less is known about these relationships in children. This study aimed to evaluate associations between teasing and disordered eating and depression in obese children. Data were taken from 79 obese children (mean age = 10.03 years; mean BMI = 27.37; %white= 29.37%; %female = 58.8%) at the baseline visit for a behavioral weight loss study for children. Teasing variables of interest included teasing by peers and/or family and negative feelings due to teasing. Unhealthy weight control behaviors included dieting, fasting, vomiting, over exercising, diet pills, diuretics and laxatives. Teasing by family was reported by 32.5% of the children, while teasing by peers was reported by 48.8% of the children. Logistic and linear regressions were used to evaluate the relationships between the teasing variables and depression and unhealthy weight control behaviors (UWCB) controlling for age and gender. Results indicated that children who are teased by other children have significantly higher levels of depression ( $B=6.1$  (SE=2.3) and are 5 times more likely to engage in UWCB (OR=5.1 (CI=1.5-17.4)). Children who endorsed that teasing by other children bothered them also had significantly higher levels of depression ( $B =2.4$  (SE=.8). There were no relationships found between teasing and binge eating in this sample, nor was there any significant relationships between family teasing variables and all outcome variables tested. Teasing, especially by other children, was associated with negative outcomes in these obese children. Interventions are needed to reduce teasing at school and longitudinal studies are recommended to understand the impact of teasing over time.

## 25 Physical Activity and Perceived Parental Attitudes in Eating-Disordered Adolescents

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Physical activity is a common feature of adolescents with eating disorders (EDs), but few studies have examined parental factors that may increase amounts of physical activity, driven exercise, or excessive exercise. This study compares ED adolescents' perceptions of maternal and paternal attitudes on exercise to quantitative self-reports of exercise in METs, episodes of driven exercise, and likelihood of excessive exercise (defined by strenuous activity totaling over 6 hours/week). Participants consisted of 155 adolescents (136 F, 19 M; 40% AN, 7.7% BN, 52.3% EDNOS) with a mean age of 16.2 and a mean percentage median body weight of 86.7% who presented to a specialty ED program. Testing included

the Project EAT survey, the EPIC-Norfolk Physical Activity Questionnaire (EPAQ), Eating Disorder Exam (EDE). No significant associations were found between subjects' perceptions of their maternal attitudes toward exercise and patients' own level of physical activity or episodes of driven exercise, yet patients who reported that their mother encouraged them 'very much' to stay fit were more likely to engage in excessive exercise (34.3% vs 21.0%  $p < .05$ ). Patients who reported that their fathers encouraged them 'very much' to be physically active had a higher EPAQ Total score (236.2 vs 168.3 METs/wk,  $p = .017$ ), Sports score (132.86 vs. 73.6 METs/wk  $p < .01$ ), and were more likely to engage in excessive exercise (44.1% vs 23.9%,  $p < .05$ ) than patients who said their fathers do not encourage them at all; no differences were seen in reports of driven exercise between groups. Analyses of females alone produced no differences from the combined sample. Adolescents who perceive that their parents want them to exercise and stay fit are more likely to engage in excessive exercise as measured by hours of strenuous activity; however, they are no more likely to report episodes of driven exercise. Larger differences between groups were found with paternal influences than maternal.

## Comorbidity

### 26

#### **Disordered Eating among Female and Male Pathological Gamblers**

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Both pathological gambling (PG) and eating disorders (EDs) are commonly viewed as behavioral addictions, although the view of EDs as addictions is controversial. Because research shows that those with one addiction often have one or more others, pathological gambling and disordered eating (DE) might co-occur at high rates. Little research has examined their comorbidity. We believe this study was the first to examine self-reported DE among individuals with PG. According to DSM-IV (APA, 2000), PG is characterized by impaired control over gambling leading to significant social and psychological impairment. Community-dwelling adults with current PG (N = 53 women and 51 men), mean age 43.5 years, completed the Eating Disorder Examination Questionnaire (EDE-Q; Fairburn & Beglin, 1994) and a structured diagnostic interview, the SCID-CV (First et al., 1996). Results showed that rates of DE among women with PG were consistently higher than published norms (Mond et al., 2006), consistent with a previous finding of high rates of lifetime EDs among these women with PG (37.8%) (von Ranson, Holub & Hodgins, 2007). Lifetime substance use disorder was also common, affecting 51.9% of current participants. Relative to men with PG, women with PG had significantly higher EDE-Q total scores, ED-Q Restraint, Eating Concern, Shape Concern, and Weight Concern subscale scores, and reported more objective bulimic episodes (all  $p$ 's < .05). No sex differences were observed in rates of subjective bulimic episodes, vomiting, or laxative use. Findings suggest that further examination of associations between EDs and pathological gambling is merited, as well as evaluation of functional relationships between gambling and EDs and potential mediating mechanisms, such as impulsivity. If further research confirms these findings, treatment providers for pathological gambling are well advised to screen for eating pathology, particularly among women.

### 27

#### **Do Parenting Women who Abuse Alcohol and Drug Differ from those with a Dual Diagnosis of Substance Use Disorder and Eating Disorder?**

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Although there is a high prevalence of alcohol and drug abuse among individuals suffering from Eating Disorders (ED), Substance Use Disorder (SUD) and ED are still mostly examined and treated separately. This study has the main objective to compare women with SUD-ED to women with SUD alone on sociodemographic factors, substance use history, types of addictions, biomedical and psychological conditions as well as past sexual, physical and emotional abuse. One hundred two parenting women seeking help for SUD participated in the study. Two groups were formed: 51 women having a dual diagnosis of SUD-ED were matched for age to 51 women with SUD alone. Only a few differences between the groups were found. SUD-ED women were more likely to have children while SUD women to be pregnant. More SUD women reported having OTC drugs as a primary addiction and more SUD-ED women had used antidepressants over the past 6 months. Past sexual abuse was more prevalent in SUD-ED women and the severity of abuse was also higher in that group. Our results seem to support the notion that problematic behaviors associated to both disorders serve the same kind of function, may it be stress reduction or avoidance. If such is the case, it would therefore be unjustified to continue to treat both disorders separately.

### 28

#### **Clinical Presentation of Eating Disordered Patients with Diabetes**

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Few studies explored the clinical profile of comorbid eating disorder (ED) and diabetes and, when such comorbidity is under investigation, participants are recruited in diabetes clinics instead of ED clinics. Moreover, most studies available have focused on the prevalence of ED and type 1 diabetes (T1D). Less is known about ED and type 2 diabetes (T2D), both in terms of prevalence rates and clinical characteristics. French speaking participants from Quebec and Europe have been recruited in forums, websites and community center to participate to an online research. All of them suffer from an ED and three groups have been created on the basis of whether or not they have a comorbid diagnosis of diabetes : ED, ED-T1D and ED-T2D. Once the groups were formed, participants were compared on clinical characteristics such as eating behaviours, body esteem and anxiety. Our results suggest that, compared to both ED-T1D and ED-T2D patients, ED participants have higher eating symptomatology as well as poorer body and weight esteem. More precisely, ED patients show lower body and weight esteem and, are more preoccupied with their eating and body than ED-T1D participants. As opposed to ED-T2D patients, ED participants report higher levels restrictions, weigh preoccupations and anxiety. Both ED-diabetes groups differ on anxiety: ED-T1D patients manifest more anxiety than ED-T2D. Our results suggest that for ED-diabetes patients, the medical condition may serve as an external attribution and contribute to reduce the impact of the ED symptomatology on psychosocial deficit. Furthermore, one could believe that ED-diabetes individuals may resemble more closely to diabetes' patients than ED patients. If that is the case, then in ED-diabetes patients, ED could be considered a secondary diagnostic, while their primary one would be diabetes. Further study should compare those three groups and considered insulin omission for both ED-T1D and ED-T2D.

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### **Co-morbid Bulimic Symptoms and Self-Harming Behaviors: The role of Emotion Regulation Difficulties**

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Our primary aim is to examine the association between symptoms of Bulimia (BN) and self-harming (SH) behaviours within a self-harming population. Specifically, we examined (1) if BN symptoms are associated with frequency of SH, (2) if BN symptoms are associated with engaging in a greater variety of types of SH (ie. cutting, burning, scratching, hitting), and finally, (3) if difficulties with emotion regulation (ER) mediate the association between symptoms of BN and either frequency of SH or engaging in a greater variety of types of SH. Participants included 66 individuals (7 males and 59 females) recruited from online self-harm groups ( $M_{age} = 24, SD = 8.3$ ). Measures included the BN subscale of the *Eating Disorder Inventory-3* (EDI-3; Garner, 2004) and the Deliberate Self-Harm Inventory, which assesses frequency of SH and variety of types of SH (DSHI; Gratz, 2001). The Difficulties with Emotion Regulation Scale was used to assess difficulties with ER (DERS; Gratz & Roemer, 2004). BN symptoms were not associated with frequency of SH ( $r = .024, p = .845$ ), but were positively associated with the use of a greater variety of types of SH ( $r = .241, p < .05$ ). A Sobel test indicated that difficulties with ER was a significant mediator of the relationship between BN symptoms and the use of a greater variety of types of SH ( $z = 2.168, p < .05$ ). That is, BN symptoms no longer predicted the use of a greater variety of types of SH after accounting for the effects of difficulties regulating emotions. Of particular interest to clinicians, these data suggest that fostering ER skills may be helpful for clients dealing with both BN and SH, a population especially resistant to treatment.

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### **An Examination of the Associations between Eating Disorder and Obsessive Compulsive Disorder Symptoms in a Sample of Community Adults**

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Numerous studies suggest that eating disorders (EDs) and obsessive-compulsive disorder (OCD) frequently co-occur. Although this research has been very informative, few studies have attempted to further explicate these findings at the symptom level. The purpose of this study was to determine whether the co-occurrence of OCD and ED symptoms is due to their shared association with neuroticism, or due to unique associations at the core of these constructs. Participants were  $N=214$  men and  $N=193$  women recruited from the community. Composite variables of body dissatisfaction, binge eating, and restrained eating were created by grouping together highly correlated subscales from the EDI-3, EDE-Q, TFEQ, and DEBQ. The Schedule of Compulsions, Obsessions, and Pathological Impulses (SCOPI) assessed OCD symptoms and the Big Five Inventory assessed neuroticism. Hierarchical multiple regression analyses indicated that neuroticism mediated associations between checking, cleaning, and restrained eating and between checking and binge eating. After controlling for neuroticism, checking ( $S\beta = .165, p = .020$ ), cleaning ( $S\beta = .119, p = .032$ ), and rituals ( $S\beta = -.167, p = .007$ ) remained significant predictors of body dissatisfaction. Further, pathological impulses ( $S\beta = -.123, p = .026$ ) predicted restrained eating. No obsessive-compulsive symptoms remained significant predictors of binge eating. Collectively, these results may explain why OCD demonstrates higher rates of comorbidity with anorexia nervosa and bulimia nervosa, syndromes in

which dietary restraint and body dissatisfaction are prominent, compared to binge eating disorder. These results suggest a need for future studies to examine whether similar underlying neurocognitive processes that give rise to compulsive checking, obsessive rituals, and pathological impulses may also contribute to the development and maintenance of body checking and dietary restriction in individuals diagnosed with eating disorders.

### 31

#### **Comorbidity Profile in ED Patients with Polycystic Ovary Syndrome**

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Menstrual irregularities and amenorrhea in ED patients have been extensively described and studied. Nevertheless, frequently those alterations precede the ED symptoms appearance or they persist even if the weight and the nutritional status have been normalized.

The menstrual cycle alterations can be explained by multiple factors, one of which could be the coexistence of a polycystic ovary syndrome (PCOS), characterized by ovaric cysts and other metabolic alterations as hyperandrogenism, insuline resistance and obesity. There is little information on this comorbidity and its role on the ED prognosis and treatment response.

The present study explored and compared the profile of current comorbidities and relapse in the first year after ED treatment in 26 women with AN or bulimic syndromes and PCOS diagnosed by pelvic ultrasound and laboratory tests, with 37 women of the same clinical cohort that did not present PCOS associated with their ED. All patients were evaluated and treated using the same protocol in an outpatient program. ED diagnosis and comorbidity diagnosis were done using the DSM IV SCID. Women with PCOS and ED had significative more affective comorbidities: Major Depression 80% vs. 21.6%; Bipolar Disorder 52% vs 2.7%; and multi impulsive behaviors: 44% vs 21.6%. There were not observable differences in anxiety disorders such as OCD and Social Anxiety Disorder.

The 69.2% of patients with PCOS and ED, had a relapse in their ED symptoms, and new affective, eating or both episodes compared with 31% of patients without PCOS.

The coexistence of a PCOS in ED patients seems to negatively affect the prognosis, due to the complexity of the comorbidity profile, the affective dysregulation that accompanies it and the tendency to relapses, that makes it necessary to follow and control the affective and impulsive symptoms in these patients.

## **Diagnosis, Classification and Measurement**

### 32

#### **Factor Analysis of the Eating Disorder Examination-Questionnaire in a Large Community Sample**

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The present study investigated the factor structure of the Eating Disorder Examination-Questionnaire (EDE-Q) in a large community sample of women. A total of 1094/3000 women randomly selected by the Norwegian National Population Register were administered the EDE-Q (38% response rate). Participants were aged 16 to 50 years [ $M=36.1$  ( $SD = 9.5$ )] with a self-reported mean BMI of 24.6 (4.8). Exploratory factor analysis using maximum likelihood extraction with a promax nonorthogonal rotation failed to replicate the original EDE-Q factor structure, but revealed an abbreviated, four-factor solution. Consistent with recent research, the majority of shape and weight concern items combined onto a single factor. Also, the two self-evaluation items loaded onto a single factor, providing empirical support for the conceptual distinction between body dissatisfaction versus self-evaluation based on weight/shape.

### 33

#### **Eating Attitudes Comparison of Anorexia Nervosa, Bulimia Nervosa and Binge Eating Disorders Patients**

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The purpose of the study was to compare the eating attitudes of anorexia nervosa, bulimia nervosa and binge eating disorder patients. Women ( $n= 105$ ) from the Eating Disorders Unit (AMBULIM) of University of Sao Paulo-Brazil diagnosed with anorexia nervosa (AN –  $n=49$ ), bulimia nervosa (BN –  $n=30$ ) and binge eating disorder (BED –  $n=26$ ) answered the Disordered Eating Attitude Scale (DEAS) that evaluate eating attitudes with 25 questions and 5 subscales: 1) Relationship with food 2) Concerns about food and weight gain 3) Restrictive and compensatory practices 4) Feelings toward eating and 5) Idea of normal eating. Weigh, height, body mass index, age and the DEAS total and subscales scores were compared among groups by means of an analysis of variance and Bonferroni or Dunnett post hoc tests for paired comparisons. It was found that BN patients presented worse eating attitudes (higher scores) in DEAS total and all subscales. The three groups were different for DEAS total score and subscales 2, 3 and 4. For the *Relationship with food*,

AN & BN and BN & BED groups were different, but no difference was found between AN & BED patients. For the *Idea of normal eating* AN & BED and BN & BED groups were different, but no difference was found between AN & BN patients. It was concluded that AN, BN and BED patients eating attitudes are different in general and these differences must be considered in the nutritional treatment strategies planning. BED patients do not presented similar eating attitudes with BN, therefore the similarities suggested by some researchers between BN and BED are not true regarding eating attitudes. AN and BN patients seems to have the same concept for normal eating besides the fact they have different behavior and relationship with food. BED patients seem to have the same aspects of relationship with food than AN patients, besides the fact that their behavior could be considered the opposite.

### **34 Investigating the Use of the Mizes Anorectic Cognitions Questionnaire in a Community Sample of Racially Diverse High School Males and Females**

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The period of adolescence marks the time when the incidence of eating disorders is highest. However, there are relatively few assessment devices which have been developed to measure the cognitions or cognitive processes of the eating disordered pathology of adolescents. One promising scale is the Mizes Anorectic Cognitions Questionnaire, and its revised version (MAC; MAC-R). The present study examined scores on the MAC and MAC-R in a racially diverse sample consisting of 201 non-clinical adolescents. The goals of this study were to (1) examine the reliability and validity of the MAC and MAC-R in a heretofore unexamined population, adolescents, and (2) examine scores on the MAC and MAC-R across sex, race, and weight classification in adolescents in order to determine whether normative data should be further stratified into these groups. Results of the study suggest that the MAC and MAC-R Total scores and subscale scores are internally consistent and reliable. Moreover, the MAC and MAC-R are strongly related to other well-established instruments, further supporting their validity. The present study also suggests that separate means and standard deviations be used when determining nonclinical male and female adolescent normative scores. There were no significant differences on scores across race and weight classification thus further stratification is not advised.

### **35 Affective Modulation of Body Image Cues in an Inpatient Population**

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Advances in psychophysiological assessment technologies have yielded promising information on the emotional processing of patients with eating disorders that traditional self-report assessments cannot capture (e.g., Friederich et al., 2006). Use of the affect modulated startle eye-blink response to index emotional processing represents a new and exciting development in the cognitive neurosciences literature. The current pilot study examined startle eye-blink in response to body image cues. Participants ( $n = 7$ ) were recruited from an inpatient eating disorder treatment program and had SCID confirmed diagnoses of AN or BN. Participants viewed a series of photos that included standardized neutral and negatively-valenced images (International Affective Picture System; IAPS) and images of the participant's face. A 105dB white noise burst was played during the presentation of the photos to elicit startle response. After the startle procedure, participants were asked to rate the photos on several dimensions. Within subject ANOVA compared participants' startle responses while viewing images of their face to the neutral and negatively-valenced images. Although not statistically significant, participants exhibited a slightly greater startle amplitude while viewing their self photo than while viewing the neutral photo (partial eta squared = 0.368;  $p = 0.07$ ), indicating that they found their facial images more aversive than the neutral images. There were no differences in startle response while viewing the self photo and while viewing negatively-valenced images ( $p = 0.508$ ). Participants rated their facial images as eliciting more anger ( $p = 0.03$ ), disgust ( $p = 0.01$ ), and sadness ( $p = .01$ ) than the neutral photos. These preliminary findings suggests that affective startle modulation can be a useful in studying emotional response to body image cues, especially for individuals with difficulty identifying and reporting emotion through traditional self-report assessments.

### **36 Eating Disorder Related Impairment in Bulimia Nervosa and Purging Disorder**

*Britny A Hildebrandt, BS, Florida State University, Tallahassee, FL; Pamela Keel, PhD, Florida State University, Tallahassee, FL*

Previous research has indicated that women with purging disorder (PD) do not differ significantly in impairment compared to women with bulimia nervosa purging subtype (BNp) using a general measure of psychosocial function. The present study sought to further examine the relationship between presence of binge-eating vs. purging and eating

disorder-related impairment. The Clinical Impairment Assessment (CIA) was administered to a group of women with BNP (n=24), BN non-purging subtype (BNnp, n=7), PD (n=23), and a non-eating disorder control group (n=24). All eating disordered groups had greater total impairment than controls. Furthermore, women with PD, BNP, and BNnp had significantly greater social impairment than controls. Women with BNP demonstrated specific cognitive impairment compared to controls and demonstrated greater total and personal impairment compared to women with PD and BNnp who differed from controls but not each other. Overall, these results suggest that both binge-eating and purging behaviors contribute to impairment in eating disorders such that women with BNP demonstrate greater personal, cognitive, and total impairment than women with PD, but women with PD resemble women with BNnp. These results further support the clinical validity of distinguishing between PD and BNnp.

**37**

### **The Association between Impulsivity and Eating Disorder Pathology in Bulimia Nervosa and Purging Disorder**

*Samantha W Zwemer, Psychology BA, Florida State University, Tallahassee, FL; Pamela Keel, PhD, Florida State University, Tallahassee, FL*

Previous research has found significant associations between several constructs of impulsivity and disordered eating pathology. The current project aimed to examine four constructs of impulsivity – lack of premeditation, lack of perseverance, sensation-seeking, and negative urgency – among three eating disorder groups. The UPPS Impulsive Behavior Scale was administered to women with purging disorder (PD, n=23), bulimia nervosa purging subtype (BNp, n=23), bulimia nervosa non-purging subtype (BNnp, n=6), and a non-eating disorder control group (n=25). Results indicated significant differences in negative urgency among all four groups. Specifically, controls exhibited significantly lower levels of negative urgency than the three eating disorder groups. The BNp group exhibited the greatest negative urgency and differed significantly from the PD group; however, there were no differences between the PD and BNnp groups. In terms of lack of premeditation and perseverance, the BNp had significantly higher scores than controls but did not differ from the other eating disorder groups. No differences were found among the four groups in level of sensation-seeking. Overall, results suggest that among these four impulsivity constructs, negative urgency exhibits the greatest clinical significance in predicting bingeing and purging behaviors, with the combination of binge-eating and purging behaviors associated with the highest levels of negative urgency.

**38**

### **Systematic Revision of Level Of Expressed Emotion Scale (Lee) in the Literature: Determining a Cutoff Point for the Lee Among Spanish Families of Adolescents with Eating Disorders**

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Literature review specific for eating disorders (ED) has shown that EE and the reaction of family members to the illness can be causal maintaining factors in ED but also modifiable ones, to which family-based interventions should be addressed. The Level of Expressed Emotion scale (LEE; Cole and Kazarian, 1988) was developed for the assessment of EE from the patients' and relatives' perspective. The original patients' version of 60 items has good internal consistency (0.84-0.89) and satisfactory test-retest reliability (0.65-0.93). However, the LEE version for relatives has not been extensively studied. The aim of the study was to revise the literature of LEE cross-cultural validations and to assess the validity, reliability and cutoff scores for a Spanish relative version of the LEE. The sample consisted of 270 Spanish caregivers of patients with an ED, aged from 27 to 75 years. A 45 item LEE was derived consisting of four factors (*Attitude towards Illness, Intrusiveness, Hostility and Coping with Illness*) whose internal consistency ranged from 0.73 to 0.86. The different factor structure may be due to a younger population sample and shorter illness duration. Convergent validity indicated a significant positive correlation between the LEE-total score and the GHQ-12 ( $r=.34$ ), GSI ( $r=.25$ ) and EDSIS ( $r=.44$ ). Through a ROC analysis, we calculated the LEE cutoff point to define high EE using the classic gold standard proposed for the GHQ-12, reaching adequate sensitivity and specificity. At higher cutoff scores, the LEE proved to be useful as a screening tool for high and low EE in an ED sample. This instrument also demonstrated high internal consistency; thus it may be an appropriate instrument to evaluate caregivers' expressed emotion levels as an outcome measure for family-based interventions aimed at reducing EE levels.

**39**

### **Characteristics of Eating Disorder Patients Who Self-Report Chewing and Spitting**

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With only a handful of studies examining chewing and spitting (CS) of food in eating disorders, this phenomenon remains poorly understood despite its prevalence among eating disorder populations. Understanding the significance of this behavior both within and across eating disorder diagnoses is important to inform assessment procedures and treatment. The purpose of this study was to examine CS in different eating disorder diagnostic groups as well as to compare those who report CS with those who do not on a variety of eating disorder symptomatology indices. Data were analyzed from 985 participants who presented for outpatient treatment from 1985 to 1996. Results indicated that lifetime rates of CS varied across eating disorder diagnoses ( $p < .01$ ): AN, 38.2%; BN, 33.7%; EDNOS, 24.7%. CS was also significantly related to binge eating and use of compensatory behaviors, as those who reported CS had higher rates of binge eating, laxative use, diuretic use, exercise, fasting, skipping meals, and eating small or low-calorie meals (all  $p$ 's  $< .05$ ). Those who endorsed CS also had lower current, highest, lowest, and goal BMI's compared to those who did not report CS (all  $p$ 's  $< .01$ ). Finally, those who reported CS were younger in age compared to those who did not report CS ( $p < .01$ ). Collectively, these findings indicate that CS is associated with greater eating pathology and is not equally prevalent across eating disorder diagnoses. Future research should clarify the correlates, mechanisms, and functions of CS in eating disorders. Assessment of eating disorders should also attend to this behavior as it may carry implications for illness progression and treatment.

#### **40 Migration of Diagnosis of Eating Disorders in a Sample of Patients Being Treated at PROATA: A Retrospective Study**

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Although it is common the migration of an eating disorder (ED) to another, there are few prospective studies evaluating this phenomenon (none in the Brazilian population). To evaluate the migration between diagnoses of ED. We evaluated 55 patients at PROATA using the ED module [Anorexia Nervosa (AN), Bulimia Nervosa (BN) and Binge-Eating Disorder (BED)] of the Structure of Clinical Interview for DSM-IV – research version, considering the past and current diagnosis. For the diagnosis of an *eating disorder not otherwise specified* (except BED), we used the DSM-IV criteria. Results (partial): Preliminary results (data collection ongoing) based on 55 subjects found that approximately 64% ( $n = 35$ ) of patients changed diagnosis of ED throughout their lives. Approximately 45% ( $n = 10$ ) of patients with BN purging type had AN (70% of the purging type). Of the patients with AN restrictive type, none had a history of BN. Of the 6 patients with AN binge eating / purging type, only one had a history of BN (purging type). Only one patient with BED described a history of AN and BN. It was found that migration between diagnoses of ED occurred in most patients and that the percentage of migration agree with retrospective studies in the literature, being more frequent the migration from AN to BN. This diagnostic instability in ED questions the limitations of classificatory system categories and reveal the need to identify stable aspects of diseases and its impact on prognosis. Longitudinal studies may help to clarify these aspects.

## **ED's in Special Population & Body Image**

#### **41 The Pursuit of Muscularity among French Adolescent Males**

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The pursuit of muscularity is emerging as an important body image concern among young males, and has been described within sociocultural models. To date, there have been no explorations of these concerns in French adolescents. The objective was to explore the pursuit of muscularity among French adolescent boys. The sample included 146 male high school students (mean age=16.29 years,  $SD = 1.19$ ). Participants completed a questionnaire assessing drive for thinness, drive for muscularity, body esteem, media-ideal internalization, appearance comparison, and sociocultural pressure. They also provided weight and height. Mean BMI was 20.5 ( $SD = 2.40$ ). Pursuit of muscularity was correlated with media-ideal internalization ( $r = .55$ ), appearance comparison ( $r = .25$ ), pressure to lose weight ( $r = .41$ ), pressure to increase weight ( $r = .35$ ), pressure to increase muscle ( $r = .45$ ), body satisfaction ( $r = -.18$ ), drive for thinness ( $r = .25$ ), and disordered eating ( $r = .55$ ). When entered into a hierarchical regression analysis sociocultural pressure, media-ideal internalization, appearance comparison, body satisfaction, pursuit of muscularity and drive for thinness successfully predicted disordered eating  $F(9, 130) = 16.20, p < .001, R^2 = .53$ . Drive for thinness and pursuit of muscularity entered together in the final step were both significant predictors of disordered eating ( $\beta = .32, p < .001; \beta = .28, p < .001$ ). These findings suggest that the pursuit of muscularity is an important aspect of French adolescent body image, and can be considered within sociocultural models of body image and eating concerns. Further research could help clarify the role of the pursuit of muscularity in the development of disordered eating and extreme body shape changing behaviors.

#### **42 Exploring the Variables in the Sociocultural Model for Eating Disorder Development in Athletes**

The present study was designed to examine the relationship of the variables in the Sociocultural Model for Eating Disorder Development (Stice & Agras, 1998) in a male and female athlete sample. More specifically, the relationship among gender, the internalization of thin ideals, body dissatisfaction, and negative affect was examined. The hypothesis that body dissatisfaction plays a mediating role between gender and the internalization of thin ideals and body dissatisfaction and negative affect was tested. The results from three reasonable alternative structural equation models provided support for this hypothesis.

The sample (N=230) was composed of those who self-identified as competitive athletes (n=50), and recreational athletes (n=180) who completed a questionnaire measuring the major components of the theoretical model which included the internalization of thin ideals, body dissatisfaction, and negative/positive affect.

Of the three reasonable alternative models tested, the Mediation model had the most support ( $\chi^2=2.56$  P=0.47 CFI=1.00 RMSEA=0.00). Findings from this model suggest that women who internalize the Sociocultural pressures to be thin have higher levels of body dissatisfaction and as a result, have higher levels of negative affect. Body dissatisfaction, then, is significantly and substantially related with negative affect mediating the relationship between gender and the internalization of thin ideals on body dissatisfaction and negative affect.

Analyses illustrated a consistent pattern for the relationships among gender, the internalization of thin ideals, and body dissatisfaction. Female athletes over male athletes, with higher levels of the internalization of thin ideals, were more likely to have higher levels of body dissatisfaction and as a result, more negative affect. These results provide support for previous research such as the findings of Bradford and Petrie (2008).

### **43 The Co-participatory Approach – A Better Method for School Body Image Intervention Design?**

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Research has previously demonstrated the success of undertaking a co-participatory approach to eating disorder interventions (Becker, Smith & Ciao, 2005). This presentation reports on three exploratory studies which adopted the co-participatory approach in designing a school-based body image intervention to change negative attitudes towards appearance and promote appearance diversity. The purpose of the research was to create an intervention which is suitable for the needs and requirements of the key stakeholders of the program. In the first two studies, focus groups were conducted with Year 8 girls (N = 12, aged 12-13 years) and school staff from a number of different schools in the South-West of England (N=25). The students had previously participated in a school body image intervention. These discussions explored stakeholders opinions about body image interventions in schools and their suggestions for the design of future interventions based upon their knowledge, expertise and experience. These findings informed the development of four interactive body image workshops held with two groups of Year 10 girls and boys (N=30, aged 14-15 years) and two groups of Year 12 girls and boys (N=20, aged 17-18 years) where students designed and developed intervention activities and materials based upon their conceptualisation of body image and their learning preferences. The findings provided a greater understanding of how young people conceptualise body image and the attitudes and the requirements of school staff for school body image interventions. The studies demonstrate the success of undertaking the co-participatory approach in designing school-based body image intervention, highlighting the benefits of consulting with stakeholders in the intervention.

### **44 Differences between Lesbians, Heterosexual Women, and Self-Identified Feminists in Body Image Concerns**

*Samantha VanHorn, MA, New York Methodist Hospital, New York, NY*

It has been well documented that body image concerns are a pervasive part of western society and culture. Though once thought to be mainly a heterosexual women's issue, research has shown that gay men and lesbians are also preoccupied with body image concerns. Even so, until very recently, research on eating disorders and body image problems has focused solely on heterosexual women. This study examined differences between lesbians (N=48), heterosexual women (N=75), and self-identified feminists (N=67) on body image concerns, identification with gender-role items, and attitudes towards feminism and the women's movement. Measures used include a demographics questionnaire, the Objectified Body Consciousness Scale (OBCS), the Bem Sex Role Inventory (BSRI), and the Attitudes Toward Feminism and Women's Movement Scale (FWM). In this sample, lesbians exhibited significantly higher levels of body image concerns than heterosexual women based on the surveillance and shame subscales of the OBCS. Lesbians identified more with masculine gender-role traits (p=.08) than did heterosexual women, who identified more with feminine gender-role traits. Self-identified feminists also demonstrated poorer body image than non-feminists. The present findings suggest that lesbians

and feminists may not be “protected” against body image concerns. Lesbians and heterosexual women both internalize cultural body standards and have a negative body image, specifically based on the OBCS shame subscale. This research found mixed results (i.e. some differences, some similarities); these mixed results conform to the mixed results of previous research. In short, the results of the present study point out the complexities that arise when studying body image concerns in a lesbian population. Results also help signify the importance and need of a psychometrically sound assessment tool to examine body image concerns in a lesbian population.

## 45

### **Social Networking and Body Dissatisfaction**

*Sarah L Rendell, BS, Ferkauf Graduate School of Psychology of Yeshiva University, Greenwich, CT; Charles Swencionis, PhD, Ferkauf Graduate School of Psychology of Yeshiva University, Bronx, NY*

The purpose of this study was to explore the relationship between social networking site use and body dissatisfaction in 18 to 30 year old women. Body dissatisfaction and social comparison are key components of eating disorder pathology.

Women who are dissatisfied with their bodies tend to compare to others, focusing on beautiful and thin aspects of others and perceived ugly aspects of themselves. However, engaging in social comparison can be detrimental to these women, as they tend to then feel worse about their own bodies. To combat loneliness and isolation, women with eating disorders may turn to social networking sites, such as Facebook. The anonymous and calculated interactions on Facebook may be less anxiety-provoking than in vivo interactions, making them more appealing to anxious individuals. 251 women completed an online survey, including measures of self-esteem, eating disorder symptoms, body dissatisfaction, and Facebook use. We found significant correlations between the amount of time spent on Facebook and body dissatisfaction,  $r_s = .19, p < .01$ . Multiple regression analyses also indicated that the amount of time spent on Facebook, the number of Facebook friends one has, the number of photos of oneself are posted, and the number of times one updates her status per week significantly predict body dissatisfaction,  $F(4, 194) = 5.33, p < .01$ , eating disorder symptom severity,  $F(4, 199) = 2.62, p < .05$ , and self-esteem,  $F(4, 214) = 2.83, p < .05$ . Because BMI was positively correlated with both body dissatisfaction,  $r_s = .46, p < .01$ , and time on Facebook,  $r_s = .15, p < .05$ , we ruled out possible mediator effects of BMI with a significant partial correlation between time on Facebook and body dissatisfaction while controlling for BMI,  $r = .18, p < .05$ . This study points to a relationship between body dissatisfaction and Facebook use.

## 46

### **Eating Behavior and Affect in Physically Active Individuals with Health vs Weight and Shape Motivations for Exercise**

*Sónia Ferreira Gonçalves, PhD, University of Minho, Braga; Rui Gomes, PhD, University of Minho, Braga*

Individuals with eating disorders are often seen as more physically active than the general population. The purpose of this study was to evaluate the prevalence and correlates of exercise motivated by health *vs* weight and shape reasons.

Participants ( $N=239$ ) completed questionnaires assessing eating behavior (Eating Disorders Questionnaire – EDE-Q, Fairburn & Beglin, 1994 ) and affect after exercise (PANAS, Watson, Clark, & Tellegen, 1988). Almost sixty percent of participants ( $N= 143, 59.8\%$ ) endorsed exercise motivated for weight and shape reasons. Weight and shape reasons group reported significantly higher positive affect before exercise than the health reasons group ( $F_{(2, 234)}=3.98, p < .05$ ). The groups that exercise for weight and shape reasons also scored higher on the measures of eating disturbance: restraint ( $F_{(1, 234)}=12.66, p < .001$ ), eating concern ( $F_{(1, 234)}=5.69, p < .05$ ), shape concern ( $F_{(1, 234)}=12.06, p < .005$ ), and weight concern ( $F_{(1, 234)}=15.12, p < .001$ ). Individuals in the weight and shape group were significantly more likely to have experienced loss of control over eating (Wald  $\chi^2 = 5.90, p < .05$ ; OR= 2.06), eat large amounts of food (Wald  $\chi^2 = 9.54, p < .005$ ; OR= 2.49), and exercise (Wald  $\chi^2 = 7.03, p < .01$ ; OR= 2.70). No differences were found in vomiting and laxative use between groups over the past 4 weeks. Shape and weight motivations for exercise appear to be a common phenomenon on physically active individuals that is associated with eating disturbance.

## 47

### **Depression and Eating Disorders in Girls with Type 1 Diabetes**

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Type 1 diabetes (T1D) is a chronic medical condition that most often develops in childhood or adolescence. Those with T1D are vulnerable to several mental health problems, including depression and eating disorders (ED), both of which may compromise the ability to optimally perform the complex tasks of diabetes management. This study examines the relationship between disturbed eating behavior, depressive symptoms and blood sugar control in teenage girls with T1D. Participants were 98 girls with T1D 14-18 years of age, attending the Diabetes Clinic at Hospital for Sick Children in Toronto. They completed diagnostic interviews for eating disorders (EDE) and depression (K-SADS). A blood test (A1c) assessed the adequacy of overall diabetes management and blood sugar control. Mean age was  $16.5 \pm 1.5$  y, mean BMI was

24.8 ± 4.2 kg/m<sup>2</sup>, and mean A1c was 8.5 ± 1.1%. 49% of girls reported current disturbed eating behavior, and 13% met criteria for a current full-syndrome or subthreshold ED. 31% reported either current or past depression (including major, minor and subclinical depression), and 12% reported current depression. Depression was associated with elevated EDE scores (EDE total score 0.51 vs 1.44,  $p=0.04$ ), and depressed girls were more likely to report an ED than girls without current depression ( $X^2=4.8$ ,  $p=0.05$ ). Conversely, girls with an ED were more likely to report a history of depression compared to those without an ED (9/13 girls with a history of depression vs 21/85 girls without an ED;  $X^2=10.5$ ,  $p=0.002$ ). There was a trend to worse blood sugar control in those with an ED (9.0 vs 8.5%;  $p=0.09$ ), but no relationship between depression and blood sugar control in this sample. Depression and disturbed eating behavior are commonly but not universally associated in girls with T1D. Further research should address mechanisms of association and treatment approaches.

## 48

### **Inducing Body Image Dissatisfaction in a Sample of Undergraduate Females**

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In the eating disorders field, inducing body dissatisfaction can be a helpful way to experimentally evaluate the effects of such dissatisfaction on a variety of affective, cognitive, and social constructs. The purpose of this study was to compare the relative effectiveness of two types of thin-ideal media (still images and film clips of thin/athletic females) for body dissatisfaction induction and to identify characteristics of females that may be most susceptible to these sorts of inductions. Undergraduate females ( $N = 141$ ) from a large Southeastern university completed, among other questionnaires, the Eating Disorder Inventory body dissatisfaction subscale (EDI-BD), were then randomly assigned to media condition, and completed the EDI-BD immediately post media intervention. Results indicated there was no significant effect for media type on body dissatisfaction after controlling for pre-media body dissatisfaction levels,  $F(1, 131)=.008$ ,  $p=.929$ . Because of the lack of different effects on body dissatisfaction, the media types were collapsed into one variable, thin-ideal media exposure, for the remaining analyses. Regression analyses revealed that three variables significantly predicted an increase in body dissatisfaction following media exposure: thin-ideal internalization,  $t(128) = 2.51$ ,  $p<.05$ ; drive for thinness,  $t(129) = 4.19$ ,  $p<.001$ ; and body surveillance,  $t(125) = 2.07$ ,  $p<.05$ . However, perfectionism did not predict change in body dissatisfaction,  $t(116) = 1.38$ ,  $p=.172$ . These results suggest that still images and film clips may induce similar levels of body dissatisfaction, which has implications for experimenters and, potentially, real-world experiences. In addition, females endorsing variables specifically related to negative appearance attitudes may be more apt to feel poorly about their bodies after viewing images of thin females compared to individuals endorsing a style more tangentially related to eating disorders (i.e., perfectionism).

## 49

### **An Evaluation of the Tripartite Influence Model of Body Dissatisfaction and Eating Disturbance with a Sample of Malaysian Women**

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Socio-cultural influences play an important role in the development and maintenance of eating pathology and negative body image. Formal socio-cultural theories, such as the Tripartite Model, explain the link between social influences and these negative outcomes. The Tripartite Influence Model proposes three factors, peers, parents, and media, which predict eating and body image disturbance. It also proposes two variables, internalization of the thin-ideal and appearance comparison processes, that are thought to mediate the relationship between the three predictors and negative eating and body image outcomes. Past research has shown support for this model among racially diverse American and British samples, but little data has been reported to provide support for the model in non-western cultures. The current study sought to examine this model using a non-western sample of women from Southeast Asia. Data was collected from a racially and ethnically diverse sample of 247 Malaysian women whose age ranged from 20 to 26 years ( $M = 22$ ,  $SD = 1.52$ ). To test the Tripartite Model in this sample, six a priori structural equation models were evaluated. A resulting model was found to have adequate fit to the data, providing support for the Tripartite Model as a socio-cultural theory that explains processes that predispose women to eating and body image disturbance.

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### **Emotion Regulation Difficulties Mediate the Association Between Symptoms of Bulimia and Use of a Greater Variety of Types of Self-Harm**

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Our primary aim is to examine the association between symptoms of Bulimia (BN) and self-harming (SH) behaviours within a self-harming population. Specifically, we examined (1) if BN symptoms are associated with frequency of SH, (2) if BN symptoms are associated with engaging in a greater variety of types of SH (ie. cutting, burning, scratching, hitting), and finally, (3) if difficulties with emotion regulation (ER) mediate the association between symptoms of BN and either frequency of SH or engaging in a greater variety of types of SH. Participants included 66 individuals (7 males and 59 females) recruited from online self-harm groups ( $M_{age} = 24, SD = 8.3$ ). Measures included the BN subscale of the *Eating Disorder Inventory-3* (EDI-3; Garner, 2004) and the Deliberate Self-Harm Inventory, which assesses frequency of SH and variety of types of SH (DSHI; Gratz, 2001). The Difficulties with Emotion Regulation Scale was used to assess difficulties with ER (DERS; Gratz & Roemer, 2004). BN symptoms were not associated with frequency of SH ( $r = .024, p = .845$ ), but were positively associated with the use of a greater variety of types of SH ( $r = .241, p < .05$ ). A Sobel test indicated that difficulties with ER was a significant mediator of the relationship between BN symptoms and the use of a greater variety of types of SH ( $z = 2.168, p < .05$ ). That is, BN symptoms no longer predicted the use of a greater variety of types of SH after accounting for the effects of difficulties regulating emotions. Of particular interest to clinicians, these data suggest that fostering ER skills may be helpful for clients dealing with both BN and SH, a population especially resistant to treatment.

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### **Initial Validation of the Work for Exercise Task for Anabolic Steroid Users**

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Previously, the work for exercise task has been used to evaluate the reinforcing effects of exercise in individuals with anorexia nervosa to study pathological forms of compulsive exercising (Schebendach, Klein, Foltin, Devlin, & Walsh, 2007). The purpose of this study was to validate this measure for use among anabolic steroid users. To date, 12 participants have participated in the task, 10 of whom are active anabolic steroid users. Each participant completed the work for exercise task in which he either works for exercise time on a treadmill or money. Additional measures included an assay measuring beta-endorphin level, and self-report questionnaires of compulsive exercise and mood. The task was found to be a valid measure for the reinforcing effects of exercise in anabolic steroid users. Preliminary results indicate a correlation of .588 ( $p = .057$ ) between the amount of work a participant is willing to engage in for exercise time and the amount of compulsive exercise across their steroid-use cycle. Further, a .712 correlation ( $p = .112$ ) was found between beta-endorphin level and the amount of work a participant is willing to perform to earn exercise time. There were no significant correlations between work for exercise and change in negative mood. Thus, the above findings indicate that the work for exercise task would be a good measure of the reinforcing effects of exercise for anabolic steroid users and the relationship between work for exercise and beta-endorphin level offers a potential mechanism for compulsive exercise.

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### **Disordered Eating Behaviors, Self-Esteem and Body Dissatisfaction in Mexican College Students**

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The purpose of this research was to identify changes in disordered eating behaviors, self-esteem and body dissatisfaction after one year follow up in college nutrition and administration students at Guadalajara University, Mexico. This is a longitudinal analytical research in 71 students (54 women and 17 men). The Pope self-esteem scale, the body figure analogue scale and the Brief Risky Eating Behaviors Scale were used to assess changes at baseline and after one year follow up. Results showed no significant changes were found at follow up in any of the 3 variables measured (self-esteem  $14.31 \pm 4.84$  vs.  $14.03 \pm 3.29$ ,  $p = .596$ ; body dissatisfaction  $0.93 \pm 1.75$  vs.  $0.82 \pm 1.52$ ,  $p = .565$ ; disordered eating  $5.24 \pm 3.79$  vs.  $4.62 \pm 3.25$ ,  $p = .075$ ). When data were stratified by career and sex, no differences were found but in men's disordered eating score, which showed a significant decrease (Baseline  $4.50 \pm 2.73$  vs Follow up  $3.43 \pm 2.20$ ,  $p = .05$ ). Regarding body dissatisfaction, men desire a bigger figure whereas females desire a thinner one, in both cases statistically related to disordered eating behaviors. It is interesting to note that males and females showed the same lack of change at follow up in self-esteem and body dissatisfaction and that only males showed a significant reduction in disordered eating, making us think of the vulnerability males are showing for disordered eating.

## **Epidemiology**

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### **The Prevalence and Co-Occurrence of NES Symptoms in a Community Sample**

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Research diagnostic criteria for NES recently have been proposed (Allison et al., 2010), and include evening hyperphagia ( $\geq 25\%$  of total daily food intake after the evening meal; EH) and/or nocturnal awakening and ingestions of food ( $\geq 2$ /week; NI), awareness of eating behavior, presence of at least three additional hunger, sleep, or mood symptoms, and distress/impairment in functioning. This study examined the prevalence of NES and the co-occurrence of NES symptoms using these diagnostic criteria in 183 community dental clinic patients that were part of a larger study on the association of nocturnal eating with oral health (Lundgren et al., 2010; M age = 57.9 years; % female = 61.5, % Caucasian = 84.5%; M BMI = 28.5 kg/m<sup>2</sup>). Participants completed the Night Eating Questionnaire (NEQ) and height and weight were measured. Only three participants (1.6%) met full research diagnostic criteria for NES, which is consistent with previous prevalence estimates of NES in community samples (e.g., Colles et al., 2007). The prevalence of individual NES criteria was higher: EH = 7.1%, NI = 1.6%, morning anorexia = 20.2%, urge to eat at night = 26.2%, sleep difficulty = 29.5%, belief that one needs to eat in order to fall asleep = 2.7%, and mood worsens in the evening = 37.7%. The co-occurrence of NES criteria was evaluated by calculating conditional probabilities using the formula  $P(X \text{ and } Y)/P(Y)$ . Of the 42 probabilities calculated, 14 were .50 or higher, indicating that in a community sample with a low prevalence of NES, approximately 33% of NES symptoms have at least a 50% probability of co-occurring with another NES symptom. Consistent with previous research assessing the prevalence and co-occurrence of NES symptoms in an inpatient sample seeking treatment for AN and BN (Lundgren et al., in press), nocturnal ingestions of food, compared to evening hyperphagia, were more likely to co-occur with other NES symptoms.

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### **Eating Disorders in Argentine Adolescents. A Two-Stage Study**

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The aim of the study is to analyze and compare eating habits, body image perception and the presence of specific symptoms of eating disorders in female and male students from high schools in Buenos Aires (Argentina). Also, to identify those adolescents who present eating disorders. A two-stage study was carried out with a sample conformed by 454 female and male students, between 13 and 18 years of age, from four high schools. In the first stage, the subjects voluntarily completed the following instruments: *Sociodemographic and specific symptoms of eating disorders questionnaire*, *Eating Disorder Inventory-2 (EDI-2)* and *Contour Drawing Rating Scale (CDRS)*. In the second stage, a semi-structured interview based on *Eating Disorder Examination (EDE)* was conducted with each of those students identified like "probable cases", in order to confirm or not the presence of an eating disorder. When compared both groups, there was found a significantly higher proportion of female students that are unsatisfied with their body image, went on a diet the last year, and self-induced vomiting in order to maintain or lose weight. Female students show significantly higher scores in five subscales of EDI-2 ("Drive for thinness", "Bulimia", "Body dissatisfaction", "Ineffectiveness" and "Interoceptive awareness"). However, male students show a significantly higher score in "Perfectionism". Finally, it was determined that a significantly higher proportion of female students present some type of eating disorder: (14.1% vs. 2.9%). The results of this study were consistent with other studies that indicate that the young women are different to the men about eating attitudes and the degree of satisfaction with body image.

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### **Socioeconomic Status and Disordered Eating in Mexican Teenagers: Results of a National Survey**

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The purpose of this study was to explore the association between socioeconomic status (SES) and disordered eating behaviors among teenagers of both sexes in Mexico. Data from teenagers surveyed by the National Health and Nutrition Survey 2006 (ENSANUT) (weighed  $n = 22,875$ ) were analyzed. The ENSANUT was a household survey with national and regional representativeness, which included the application of a previously validated instrument for the measurement of disordered eating attitudes and behaviors. It also collected information at the household level that allowed for the classification of households according to SES. Ordinal logistic regression models were adjusted, accounting for the sample design, with score in the questionnaire as the dependent variables. The prevalence of high-risk disordered eating was 0.4% (CI95% 0.2-0.6) for boys and 1.0% (CI95% 0.8-1.2) for girls. After adjusting for sex and body mass index, teenagers from higher SES household were more likely to present disordered eating (OR 2.26, CI95% 1.59, 3.19, for the comparison of higher vs. lower SES). In this Latin-American country, characterized by high disparity in income, SES is a factor strongly related to attitudes and practices that can be considered of risk for eating disorders.

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### **Predictors of Resumption of Menses Among Inpatients with Anorexia Nervosa**

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Amenorrhea, or loss of menses, is commonly associated with the diagnosis of Anorexia Nervosa (AN); however, few studies have examined predictors of menstrual recovery. This study aimed to examine predictors of resumption of menses and differences between inpatients with AN who did and did not resume menses during hospitalization. We conducted a retrospective chart review of 51 patients meeting full DSM-IV criteria for AN, including amenorrhea, at admission to a hospital-based refeeding program that discharges patients 4 – 6 weeks following initial weight restoration ( $\geq 90\%$  of Ideal Body Weight). Menstrual status at admission and discharge were determined by the Eating Disorder Examination (EDE), a self-report questionnaire, and clinical notes. Our sample included 12 patients who resumed menses and 39 who did not prior to discharge. A logistic regression examined lowest lifetime body mass index (BMI), admission BMI, diagnostic subtype, and time since last menstrual period as predictors of menses resumption. While none of the predictors were statistically significant, the odds ratios for lifetime lowest BMI and diagnostic subtype were moderately large (0.6 for each), suggesting that those with a lower lifetime BMI and AN-restricting subtype are less likely to restore menses in the hospital. An independent samples *t*-test found that patients with and patients without resumption of menses differed significantly on the EDE Restraint subscale ( $p < .03$ ,  $d = 1.1$ ), although paradoxically those resuming menses had higher restraint scores. Preliminary findings suggest that biological and psychological factors may influence resumption of menses. Data collection is ongoing and results from the larger sample will be presented.

## **Gender, Ethnicity, and Culture**

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### **Utility of the Eating Inventory among African American and Caucasian Women**

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African American (AA) women suffer disproportionately from Obesity/Overweight and weight-related health disparities. Eating behavior is highly related to obesity and weight change over time. Assessments are often based on Caucasian (CA) culture's drive for thinness that may not hold across cultures. Among overweight women seeking weight-loss therapy, the Eating Inventory (EI) is commonly used for assessment of such behaviors. The EI may be used to generate global (disinhibition, restraint, hunger) or specific (disinhibition subtypes: habitual, situational, emotional; restraint subtypes: flexible, rigid; hunger subtypes: internal, external) eating behaviors. Distinct eating patterns depend on individual factors (e.g., body weight, age, cultural ethnicity) and differentially impact body weight. Conceptualizing specific aberrant eating behavior subtypes is recommended to elucidate disordered eating behavior to aid in targeted intervention strategies, which are particularly needed for AA's. Yet, the behavioral constructs have not been widely applied outside of CA samples. We used the EI to assess 99 obese (body mass index (BMI)  $32 \pm 6.2 \text{ kg/m}^2$ ) women (age  $36 \pm 12 \text{ y}$ ) of two racial/ethnic groups (46% AA, 54% CA) recruited for a study on emotional eating. Eating behavior and its relation to BMI varied by ethnic group. Overall, AA women had lower scores on global and specific subscales ( $p < .05$ ). Both global and specific subscales were consistently related to BMI among CA women but not among AA women. Global scales ( $p < .03$ ), but not specific scales ( $p > .35$ ), were significantly related to BMI among AA women. Constructs measured by the EI may not be equivalent for AA women and, therefore, are less useful for understanding eating behavior among AA women who report emotional eating, compared to CA women. Findings highlight the importance of considering construct equivalence when utilizing eating assessments for AAs and the need to develop culture-specific assessment instruments.

### **Self-Objectification and the Thin Ideal in a Sample of Latina College Students**

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The purpose of the current study was to examine the construct of self-objectification and its relationship to the internalization of the thin ideal in a sample of Latina undergraduates. The current sample was composed of 152 self-identified Latina undergraduates who indicated that they were fluent in English. Self-objectification was measured using the Body Shame and Surveillance subscales of the Objectified Body Consciousness Scale (OBCS) and the Self Objectification Questionnaire (SOQ). Internalization of the thin ideal was measured using the Internalization subscale of the Sociocultural Attitudes Towards Appearance Scale -3 (SATAQ-3), and the Information subscale of the SATAQ-3 was used to measure awareness of cultural norms for attractiveness. A mediational model was examined looking at the impact of awareness of cultural norms and self-objectification on the internalization of the thin ideal. Results indicated that the Surveillance subscale of the OBCS and the SOQ both fully mediated the relationship between awareness and internalization of the thin ideal in this sample. These results are important for several reasons. First, self-report measures of self-objectification have not specifically been examined in a sample of Latina women and these results provide initial data on mean scores in this population. Second, these results suggest that one mechanism by which Latina women go on to internalize the thin ideal is via self-objectification, suggesting that it may be important to target the development of self-objectification as a way to reduce internalization of the thin ideal and subsequent body image disturbance and disordered eating.

### **Perceived Racism, Hopelessness, and Eating Disorder Pathology among African American Women: A Community Study**

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According to the National Survey of American Life, the lifetime prevalence rates of anorexia nervosa, bulimia nervosa, and binge eating disorder among African American women are 14%, 2%, and 5%, respectively (Taylor, Caldwell, Baser, Faison, & Jackson, 2007). Previous research has found that African American and European American women experiencing negative life stress are more likely to engage in maladaptive eating behaviors and develop eating disorders (e.g., Cain, Bardone-Cone, Abramson, Vohs, & Joiner, 2008; Rojo, Conesa, Bermudez, & Livianos, 2006; Smyth et al., 2007). Other research has suggested that stress specifically associated with perceived racism may particularly predispose African American women to disordered eating pathology (e.g., Crago, Shisslak, & Estes, 1996; Gordon, Castro, Sitnikov, & Holm-Denoma, 2010; Perez, Voelz, Pettit, & Joiner, 2001). The present study was part of a larger, ongoing study to examine stress and coping in an African American community sample. In preliminary analyses, African American women ( $N = 50$ ) completed measures of depressive symptomatology, hopelessness, perceived racism and disordered eating. Regression analyses found that, even after controlling for symptoms of depression, perceived racism was significantly associated with dietary restraint [ $R^2 = .24$ ,  $F(4, 48) = 3.46$ ,  $p < .05$ ], shape concerns [ $R^2 = .22$ ,  $F(4, 48) = 3.08$ ,  $p < .05$ ], weight concerns [ $R^2 = .20$ ,  $F(4, 48) = 2.77$ ,  $p < .05$ ], and eating concerns [ $R^2 = .24$ ,  $F(4, 48) = 3.37$ ,  $p < .05$ ]. Hopelessness, however, was not associated with dietary restraint, shape concerns, weight concerns, or eating concerns after controlling for perceived racism and depressive symptomatology. Taken together, these findings suggest that perceived racism among African American women is related to eating pathology. Future research will benefit from examining the mechanism of action driving this association.

### **The Influence of Objectification on Body Image in Sexual Activities: An Examination in an Ethnically Diverse Sample of College-Age Women**

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The sexual objectification of women is ubiquitous in Western culture. Sexualized images of the female body are proliferated through film, advertisements, television shows, music videos, and women's magazines. Extant research demonstrates that objectification can negatively influence the psychological functioning of women, particularly with regards to body image and eating pathology. The overarching purpose of this study was to investigate the relationships between objectification, body image in sexual activities, self-esteem, and eating pathology in a large, ethnically diverse sample of college-aged women. Undergraduate females ( $N = 1294$ ) completed measures of objectified body consciousness, body exposure during sexual activities, body esteem, self-esteem, and demographic information. Results suggested that sexual objectification was negatively correlated with body image in sexual activities, self-esteem, and body esteem. Regression analyses indicated that, after controlling for age and BMI, objectification in the form of perceived body-shame

and -surveillance predicted less positive body image in sexual activities. Furthermore, self-esteem moderated the relationship between objectification-based control and body image in sexual activities. Given that these data suggest that increased objectification predicts decreased body image in sexual activities and body esteem, these findings have important implications for the field of women's mental health and sexual functioning.

## Other

### 61 **Nutrition Education for Adolescents with Eating Disorders: A Curriculum Development with a DBT Format**

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The aim of the study was to create a curriculum for a nutrition education program with a dialectical behavioral therapy (DBT) format for adolescents with eating disorders. This is a broad based nutrition education curriculum that addresses nutrition, weight and food topics as well as some of the topics suggested in the education piece of Cognitive Behavioral Therapy (CBT) in a style consistent with DBT. Several topics have been suggested for educational programs for patients with eating disorders but to our knowledge no nutrition education curriculum with a DBT format has been published. An online questionnaire was designed and voluntarily applied to 14 expert dietitians and therapists who were members of the Academy for Eating Disorders and treated adolescents with eating disorders. The questionnaire asked their opinion about a suggested list of 8 topics for the program and surveyed the most common cognitive distortions seen in adolescents with eating disorders. The professionals who participated in the questionnaire approved the topics and suggested 7 topics more. A total of 14 topics were condensed in seven nutrition education lessons. The information obtained in relation to the cognitive distortions most commonly seen in adolescents with eating disorders was useful to develop some didactic materials that focused on those specific cognitions. All the lessons included the skills, format and style suggested by the DBT. Each lesson described the objectives, topics and justification. The didactic materials including handouts and power point presentations as well as methods of evaluation were developed. The curriculum was reviewed by two professional experts in the field of nutrition and psychology. To our knowledge, this is the first curriculum developed for nutrition education sessions with a DBT format. In the near future each lesson should be piloted in a group of adolescents with eating disorders who participate in an eating disorder program that includes DBT.

### 62 **An Examination of Eating Disorder Internship Sites Based on Information Available to Prospective Intern Applicants**

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Students seeking a doctoral degree in clinical, counseling or school psychology must complete a pre-doctoral clinical internship. In the US and Canada, the Association of Psychology Postdoctoral and Internships Center (APPIC) "Match" online system is the only way for nearly all students to access information and apply for internship. Students interested in a site with specialized training in eating disorders must rely on site-supplied information provided within the APPIC online profile. This current poster examined 190 sites on APPIC and their related websites, that indicated that they provide either a "major" or "minor" rotation in eating disorders. Preliminary results indicate overall a paucity of any eating disorder training specific information available either on APPIC or the website of the internship site. Nearly 1/3rd of sites claiming to provide specialized training were college counseling centers, with medical centers making up 12%. Less than 10% of sites claiming to have specialized rotations provided basic information such as eating disorder case load, specialized didactic training or eating disorder specific supervision. Recommendations for guidelines for advertising a specialty rotation in eating disorders and for students seeking out such information will be discussed.

### 63 **Fat Disparagement Media Exposure and its Effects on Body Dissatisfaction, Negative Affect, Weight Control Practice Intentions, and Sub-clinical Eating Behavior in College Women**

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Previous research implicates media exposure as an environmental contributor to psychological and eating disturbance. The current study sought to uncover whether fat stigmatization video media exposure is an acute environmental trigger for psychological disturbance and binge initiation by dismantling and experimentally manipulating fat media messages. Undergraduate women (N=197) from Caucasian (66%), Hispanic American (15%), African American (13%), and Asian American (4%) ethnic backgrounds with a range of BMIs (6% underweight, 60% average weight, 20% overweight, 12% obese) (M age=21.6, SD=4.7) were assigned to one of four media message video conditions: a fat negative interaction, fat comedy, control stigmatization, or control comedy condition. Psychological functioning and weight control variables were assessed at baseline, pre-test, and post-test. A taste-test bowl of mini cookies was presented following media exposure. A

series of ANCOVAs were conducted, followed by moderation and mediation analyses. Fat message exposure resulted in significantly greater post-test perceived pressure to lose weight  $F(1,197)=34.14$ ,  $p=.000$ , negative affect  $F(1,197)=3.78$ ,  $p=.05$ , guilt  $F(1,197)=8.9$ ,  $p=.003$ , and anger  $F(1,197)=4.11$ ,  $p=.04$  than control conditions. Participants exposed to fat messages were significantly more likely to restrict food intake  $F(1,181)=4.58$ ,  $p=.03$ . BMI moderated the relationship between fat message exposure and negative affect and hostility, and a history of weight related teasing moderated the relationship between fat message exposure and negative mood dependent variables. Appearance activation was a significant mediator between fat message exposure and body dissatisfaction. Implications for interventions include teaching healthy coping responses to media messages (CBT, reductions in television consumption.)

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#### **Oral Health Knowledge and Behaviors among Patients with Eating Disorders**

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One of the many areas negatively affected by eating disorders is the oral cavity. The oral manifestations of eating disorders have been well documented in the literature. However, what remains unknown is whether or not patients diagnosed with an eating disorder know the effects of this disease on their oral health. The purpose of this research project is to determine the oral health knowledge and oral homecare practice behaviors among patients with eating disorders. The hypothesis is these patients are not knowledgeable about the oral implications of their disease, and these patients are also lacking in their oral homecare practice behaviors. A 20-item survey questionnaire was developed, IRB approved, pretested, and delivered to patients of the University of North Carolina's Eating Disorders Program. Data will be analyzed using bivariate testing to assess whether diagnosis, age, or length of time since initial diagnosis, will have an affect on oral health knowledge. Multivariate analyses will be performed using ordinal logistic regression. There are no results to report at this time. Data collection will be completed in January 2011 and analyzed prior to April, 2011.

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#### **Use of Standardized Patient Eating Disorder Simulation Module to Evaluate Pediatric Resident-Patient Communication Skills and Relationship between Communication Skills and Self-Efficacy**

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The objective of this research was to compare pediatric resident self-efficacy related to eating disorders to patient ratings of aspects of the physician-patient encounter. Pediatric residents ( $n=24$ ) beginning their adolescent medicine rotation participated in a standardized patient (SP) education module where the SP was trained to present with eating disorder symptoms. A self-efficacy tool was completed before (PRE) and after (POST) SP module completion. The SP completed a Patient-Physician Interaction tool to rate aspects of the encounter. Descriptive statistics and means comparisons were performed (SPSS 18.0). SP ratings were very good or excellent for >70% of encounters for proper intro, warm/caring attitude, respectful/nonjudgmental, didn't act bored/ignore, eye contact, understandable/explained terminology, explained conceptualization, and listened carefully; 46-63% very good or excellent for discussed confidentiality; displayed confidence; showed interest; and encouraged questions. Fair responses were endorsed 4-13% across many of the items, including proper introduction, discussing confidentiality, demonstrating confidence, being respectful/nonjudgmental, making eye contact, explaining conceptualization, encouraging questions, and listening. No poor ratings were endorsed. SP interaction ratings comparison to resident self-efficacy at PRE ( $p < .05$ ): 70% of those rated excellent in warm attitude were somewhat confident in ascertaining an eating disorder; 88% excellent in terminology were somewhat confident in interviewing skills; 80% excellent in eye contact were somewhat confident making appropriate referral for an eating disorder. At POST ( $p < .05$ ): <50% somewhat confident in interviewing skills were very good in addressing confidentiality; 100% confident in formulating impressions/recommendations were very good in addressing confidentiality; <50% somewhat confident in knowledge of eating disorders were excellent in encouraging questions. Important aspects of patient-physician encounter are influenced by self-efficacy. Increasing confidence in working with adolescents and eating disorders is important for patient care.

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#### **Use of a Standardized Patient Education Module to Evaluate Pediatric Resident Knowledge in Assessment for Eating Disorder and Relationship of Knowledge to Self-Efficacy**

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The objective of this research was to assess pediatric resident knowledge regarding assessment of adolescent patients presenting with eating disorders and to compare resident self-efficacy with knowledge levels. Pediatric residents (n=24) beginning their adolescent medicine rotation participated in a standardized patient (SP) education module where the SP was trained to present with eating disorder symptoms. A self-efficacy tool was completed by the residents immediately before (PRE) and after (POST) SP module completion. A knowledge tool was completed by investigators while observing the interaction through video monitoring. Descriptive statistics and means comparisons were used to evaluate relationships (SPSS, 18.0). Most areas were fully addressed by < 55% of residents with weight loss being fully addressed by 68% of residents. Confidentiality was not addressed by 70% of residents. Social functioning, medical history, substance use, ideal weight/body image, and physical symptoms were not addressed by 30-60% of residents. Comparison of knowledge to self-efficacy at PRE ( $p < .05$ ): those confident in knowledge of treatment for eating disorders fully addressed weight loss; those not confident in appropriate referral for eating disorders treatment did not address weight loss; half of those confident in formulating impressions/recommendations fully addressed confidentiality; less than half of those somewhat confident in formulating impressions/recommendations fully addressed social functioning; less than half of those somewhat confident in appropriate referral for eating disorder treatment fully addressed physical symptoms and life stressors; less than two thirds of those somewhat confident in general knowledge of eating disorders fully addressed mood/emotional functioning. Pediatric resident knowledge in eating disorder evaluation was inadequate and self-efficacy appeared related to knowledge which may have implications for identification of eating disorder patients.

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### **Social Support, Family Stigma and Family Functioning in Carers of Young Adults with Anorexia Nervosa: A Mediation Analysis**

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Eating disorders have a significant impact on family functioning and on the psychological distress of carers. Previous studies have suggested that stigma and social support influence family functioning in families of people with eating disorders. However, the relationship between these predictors remains to be elucidated. This exploratory study examined the hypothesis that social support mediates the influence of family stigma on family functioning. Using a cross-sectional design, self-report measures were disseminated to a convenience sample of 120 family members of individuals with long-term anorexia nervosa, of which 83 met the inclusion criteria for the study. In order to determine mediation effects, the following regression analyses were performed: 1) family functioning regressed on family stigma, 2) social support regressed on family stigma, and 3) family functioning regressed on both family stigma and social support. A mediation effect would be suggested if a significant effect of the independent variable is reduced in the third regression analysis while the effect of the mediating variable remains significant. Multiple regression analyses revealed: 1) Increased family stigma predicted problems in family functioning ( $\beta = .31, t = 2.97, p = 0.004$ ), 2) Increased family stigma predicted decreased social support ( $\beta = -.40, t = -3.89, p < 0.001$ ) and 3) Entering both predictor variables in the regression analysis resulted in a non-significant result for family stigma ( $\beta = .20, t = 1.77, p = 0.08$ ) whereas social support remained a significant predictor ( $\beta = -2.9, t = -2.66, p = 0.01$ ). These results are consistent with a partial mediation effect of social support on the relationship between family stigma and family functioning. Therefore, interventions aimed at improving social support for families should mitigate family stigma and lead to improved family functioning.

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### **Self-Objectification: Testing a Mediational Model of Body Surveillance, Body Shame, and Eating Disorder Symptoms Among an Ethnically Diverse Sample of College-Aged Women**

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Objectification theory asserts that regular exposure to sexual objectification (e.g., sexual harassment, leering, sexualized media) across multiple social contexts socializes girls and women to adopt a third-person external perspective of themselves, referred to as self-objectification. This particular self-perspective manifests as habitual body monitoring, which, in turn, leads to increased body shame and eating pathology. Extending prior research with primarily White samples of women, the current study investigated a more ethnically diverse sample to test race/ethnicity as a moderator of these previously demonstrated patterns. Participants were 1,149 American female college students, ranging in age from 18 to 55 years old ( $M = 21.03, SD = 4.29$ ), and ethnically diverse (61.6% Caucasian, 11.8% Black or African American, 12.7% Hispanic or Latina, 2.9% Asian or Asian American, 8.5% multiracial, and 2.5% Pacific Islander, Middle Eastern, or Native American). Participants completed on-line self-report measures of self-monitoring behaviors and body shame, respectively, and the Eating Disorder Examination-Questionnaire was used to assess disordered eating, thoughts, and behaviors. In the overall sample, both self-surveillance ( $\beta = .26, p < .001$ ) and body shame ( $\beta = .49, p < .001$ ) significantly predicted eating pathology. The Sobel test indicated that body shame was a significant mediator of the relationship between body surveillance and eating pathology ( $z = 7.60, p < .001$ ). However, race/ethnicity moderated the effect; body shame was a significant mediator for White and Hispanic women, but not for Black women. Our analyses support growing

evidence for the role of body shame as a mediator between body surveillance and eating pathology, but importantly, only for women in certain racial/ethnic groups.

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### **Nintendo Wii and Eating Disorders: A Case Report**

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Only few published papers discussed the use of the videogame Nintendo Wii. One of its games, involves the use of a Balance Board, a wireless scale that measures the weight and BMI. The player can create his own profile by choosing many of its characteristics such as eyes colors. By creating his own character (Mii) the player can use him in many games. The aim of this report is to discuss how a patient with BN got involved with her Mii. P, 22 years old, arrived for treatment in 2008, weighting 50,2kg (BMI=18,21kg/m<sup>2</sup>) and presenting 3-4 binge eating episodes per week. She was abusing laxatives and diuretics but was not making herself sick. P used to exercise 45 minutes/day, 6 days/week, since the age of 16. She then started to play Wii Fit in August/2008 and created a character that she found prettier than herself. As she was compulsively exercising with the game, her Mii became "sad", "haggard", "growing weak", as her BMI decreased, reaching 17,8kg/m<sup>2</sup> by September 2008. Opposite to what was being shown by her Mii, P was happy with this condition. However, as P restored her weight with the treatment, reaching a BMI of 18,6kg/m<sup>2</sup>, her body image distortion got worse and she started avoiding going out as she felt "fat". P also got worried and sad with her Mii, which showed a happy face and a bigger body. P got deeply involved with her Mii by having her mood extremely affected by its body image, but not by its mood. This stands out the issue of increased risk of playing these games by those who show vulnerabilities as compulsive behaviours, body image distortions and eating disorders, and are more prone to engage in increased interaction with the game due to their psychopathology.

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### **Impaired Set-Shifting Ability in Patients with Eating Disorders, which is not Moderated by Their Catechol-O-Methyltransferase Val158Met Genotype**

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The aim of this study was to examine the set-shifting ability in women with both anorexia nervosa (AN) and bulimia nervosa (BN) and to investigate whether it is contributed by the catechol-O-methyltransferase (COMT) Val158Met genotype. A total of 102 Korean participants - 40 women with lifetime AN, 28 women with lifetime BN, and 34 healthy women of comparable age and IQ - were examined. A neuropsychological battery of tests was applied and blood samples were obtained for COMT Val158Met genotyping. Set-shifting impairments (Trail Making Test, Part B) were found in patients with AN and BN, respectively. Furthermore, the eating disorders were also linked to deficits in attentional mechanisms (Trail Making Test, Part A) and motor skills (Finger Tapping Test). Finally, set-shifting and its link to eating disorders were not moderated by COMT Val158Met genotype.

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### **Novelty Seeking, Diet Energy Density, Diet Variety, and Menstrual Status Among Weight-Restored Patients with Anorexia Nervosa**

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A relationship between personality variables and menstrual status has been observed among women with anorexia nervosa (AN) in several studies, and in particular between scores on the novelty seeking subscale of the Temperament and Character Inventory (TCI) and amenorrhea. The resumption of menstruation following weight restoration can provide important clinical information, and is essential for bone and reproductive health. The purpose of this study was to examine the relationship between novelty seeking and menstrual status for inpatients with AN following weight restoration, and to evaluate whether measures of diet variety and diet energy density affect the relationship between these variables. Sixty inpatients with AN completed the TCI after admission to the hospital and following weight restoration (90% of ideal body weight). Weight-restored patients with AN completed 4-day food records, which allowed the calculation of a Diet Variety Score (DVS) and Diet Energy Density Score (DEDS). A logistic regression examined whether DVS or DEDS scores moderated the relationship between novelty seeking and menstrual status. A trend was observed for DVS ( $\beta = -0.699$ ,  $p = 0.06$ ) and the interaction of DVS and novelty seeking ( $\beta = 0.038$ ,  $p = 0.06$ ) in predicting menstrual status. Specifically, patients with lower diet variety or the combination of lower diet variety and lower novelty seeking scores were less likely to resume menstruation. These results suggest that diet variety may play a role in the previously-observed relationship between high scores on the novelty seeking subscale of the TCI and lower rates of amenorrhea in low-weight patients with AN. Data from additional inpatients will be presented to increase our power to detect a

significant moderator effect for DVS scores on menstrual status. In addition, we will replicate analyses evaluating the relationship between novelty seeking and amenorrhea among patients with AN at a low body weight.

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### **Amygdala Hyperactivation in Women with Eating Disorders in Response to Unpleasant Stimuli: A fMRI Study**

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The aim of this study was to compare patterns of regional brain activation in patients with eating disorders (ED) and healthy volunteers during emotional stimulation. A group of 13 young female ED outpatients was selected using DSM-IV criteria and 13 young healthy female volunteers with no significant differences in sociodemographic or environmental data. fMRI was used to examine the neural responses after visual stimulation with neutral and fearful images, taken from the IAPS (International Affective Picture System) and selected a region of interest (ROI) approach to examine the function of the amygdala in emotional processing. Data processing and higher level analysis were carried out using FSL (fMRI's Software Library). ED patients showed significantly greater right amygdala activation to the fearful images versus neutral images than healthy control subjects ( $p < 0.02$ ). A higher right amygdala response to processing of fearful stimuli was observed in ED patients compared to healthy volunteers. This emotional dysregulation in the affective response to unpleasant stimuli would correlate with a maladaptive response and therefore justify disruptive behaviour in these patients.

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### **How do Patients and Relatives Perceive Eating Disorders? Relations with Patient's Adjustment**

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The aim of this study was to examine the relation between the degree of dissimilarity in patients' and relatives' perception of eating disorder and patient adjustment. The sample was ninety-eight eating disorders patients and sixty relatives were interviewed. They completed the Spanish version for eating disorders of the Revised Illness Perception Questionnaire (IPQ-R). The results suggested that patients who agreed with their relatives that their illness is highly distressing, a chronic condition and with high identity, showed higher psychological distress than patients who did not agree with their relatives. When patient and relative had fairly positive perceptions of illness controllability and curability, these patients showed lower levels of depression and anxiety. These results show the importance of the relatives' perception for eating disorders patients' adjustment.

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### **Bariatric Weight-Loss Surgery for Patients with Type 2 Diabetes: Current Questions Regarding Diabetes-Specific Clinical Outcomes and Patient Selection Criteria**

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In 2009, the Diabetes Surgery Summit (DSS) recommended that "bariatric surgery should be considered for the specific treatment of type 2 diabetes" in patients with a BMI of 35 or more, and that the surgery may also be appropriate for treatment of people with type 2 diabetes with a BMI of 30-35. These recommendations, along with the continued increase of patients undergoing the procedure, have raised important questions regarding the relative lack of research on diabetes-specific clinical outcomes as well as patient selection criteria for this procedure.

In this presentation, we first briefly review key clinical outcome data on bariatric surgery patients in general, including medical, psychological, and quality-of-life findings. We then highlight a number of specific clinical diabetes outcomes which should perhaps be addressed in future randomized-controlled trials, including diabetes-related quality of life, depression or diabetes-related distress, and adherence to the diabetes self-care regimen.

Next, we examine issues in patient selection in this population by reviewing some of the recent, robust literature on depression and treatment adherence in diabetes. We suggest that those patients with depression, diabetes-related distress, or other co-morbid psychological illnesses such as eating disorders may be more likely to experience difficulty with the post-operative recovery process, leading to less favorable clinical outcomes. In addition, problems with diabetes-related complications and metabolic issues may lead to worse outcomes. We therefore discuss suggestions for a more comprehensive pre-bariatric psychological assessment procedure for these patients, including supplementary questions and assessment measures. In general, we hope that further discussion and research in these areas will lead to better standardization of the pre-bariatric psychological evaluation process, and will help both clinicians and their patients to effectively weigh the benefits and rewards of this procedure.

## **Outcome Research**

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### **Perseverative Thinking in Women with Bulimia Nervosa**

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Eating disorders seem to be associated with some grade of neuropsychological alteration, although the specific functions that are altered are not consistent among the studies. Wisconsin Card Sorting Test (WCST; Grant and Berg, 1948) it is one of the tests more broadly used to evaluate cognitive strategies as the abstraction, the flexibility in thinking and the use of strategies, although its use is scarce in patient with bulimia nervosa (BN). The objective of the work was to evaluate the cognitive strategies in patient with BN. 32 patients with an age 21 year-old average (SD = 3.76) were matched in age with 32 controls without disorder. Cognitive strategies were evaluated using the WCST, and groups were compared using independent samples t tests. We found statistically significant differences among the groups ( $p < .05$ ) in the number of trials ( $t = 2.01$ ), mistakes ( $t = 2.00$ ), perseverative answers ( $t = 2.02$ ), and trials to conclude the first category ( $t = 2.46$ ), where BN patients showed a bias in the cognitive strategies in comparison with the group control. In conclusion, BN patients show higher perseverative thinking, which indicates a deficit in the establishment of an appropriate strategy to solve problems, which is characteristic of BN patients. From this perspective, the alterations in body image and the deficit in the thought represent different forms of biases on information processing, because a distortion exists in the way that the individuals perceive and they interpret their experiences.

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### **Eating Behaviors and Drive for Muscularity in Males**

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Researchers agree on the need to deepen into the study of masculine body image and, particularly, into the drive to increase muscularity. The goal of this paper was to compare disordered eating behaviors and attitudes in a group of men with high drive for muscularity. The sample included 278 college students from 18 to 26 years-old. The sample was divided in quartiles according to the score obtained in the Drive for Muscularity Scale. The scores of the groups with high and low drive for muscularity were compared in Eating Attitudes Test and Bulimia Test subscales, and Eating Disorders Inventory's Body Dissatisfaction subscale. High drive for muscularity group showed higher scores on drive for thinness, food concern, perceived social pressure, and compensatory behaviors as well as a higher score on the Eating Attitudes Test, in comparison to the low drive for muscularity group. Also, high drive for muscularity group showed higher overeating and negative feelings after overeating as well as a higher score on the Bulimia Test. There were no differences on body dissatisfaction. Thus, the results of this study indicate that drive for muscularity in males is associated to disordered eating behaviors and attitudes, which are related to eating disorders.

## **Personality and Cognition**

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### **Changes in the Frontal Lobe Functions in Patients with Eating Disorders During Intentional Loss Task: A Near Infrared Spectroscopy Study**

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Neuroimaging studies have shown that the frontal lobe dysfunctions are associated with the cognitive impairment in patients with eating disorders (ED). Little is known about prefrontal neural activity associated with emotional inhibition, which may contribute to dietary restraint and alexithymia in patients with ED. The aim of this study was to investigate frontal lobe activity using near infrared spectroscopy (NIRS) during a word fluency task and a rock-paper-scissors task (intentional loss task). ED patients; patients with anorexia nervosa and with bulimia nervosa and age-matched 14 healthy control participants (HC group) performed a word fluency task and a rock-paper-scissors task (intentional loss task) as the cognitive tasks evoking prefrontal cortical activity. During performing tasks, the changes in hemoglobin concentrations of prefrontal regions were measured with a two-channel NIRS. All participants completed the Hospital Anxiety and

Depression Scale (HADS), and only ED group were assessed using the Eating Disorder Inventory, the Eating Disorder Examination Questionnaire, the Bulimic Investigatory Test, and the Toronto Alexithymia Scale. ED group showed decreased body mass index (BMI) and higher levels in the HADS anxiety and depression scores compared to HC. During a word fluency task, number of words expressed in 60 seconds in ED group was significantly lower than those in the HC, and the prefrontal activities showed no significant difference between two groups. During a rock-paper-scissors task, ED group showed hyper activation patterns in the frontal regions compared with the HC. There was no significant difference in correct answer rates and reaction times between groups. Correlation analyses revealed some correlations between symptom scales and changes in the frontal activities. We conclude that hyper activation patterns observed during intentional loss task may be associated with emotional inhibition in patients with ED.

## **78 Exploring the Relationship between Facets of Mindfulness and Eating Pathology in Women**

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Although researchers have examined the efficacy of acceptance- and mindfulness-based interventions in the treatment of eating disorders, few studies have explored the association between trait mindfulness and eating pathology. Therefore, the purpose of the current investigation was to examine the relationship between multiple facets of mindfulness (acting with awareness, nonreactivity, nonjudgment, describing, and observing) and eating pathology. Undergraduate women (N = 276) completed the Eating Attitudes Test-26, the Five Facet Mindfulness Questionnaire, and the 21-item version of the Depression Anxiety Stress Scales. A hierarchical regression analysis revealed that four mindfulness facets (awareness, nonreactivity, nonjudgment, and describing) were uniquely associated with eating pathology above and beyond anxiety and depression symptoms. Results are discussed with regard to the potential role of trait mindfulness as a protective factor in eating pathology, as well as the possible utility of mindfulness-based treatments for eating disorders.

## **79 Facial Emotion Processing in Eating Disorders**

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Previous work has demonstrated that individuals with eating disorders exhibit deficits in emotion processing, which may relate more broadly to poor emotional judgment and interpersonal communication. The present study aims to examine emotion processing among those with history of eating disorder by assessing accuracy and reaction time in response to visual emotional stimuli. We predicted that the eating disorder (ED) group would have slower reaction times to all emotional stimuli in comparison to psychiatric (PC) and healthy control (HC) groups, and would be less accurate in their recognition of facial emotions than control groups. To study this hypothesis, we used a computer-based task whereby participants were presented with a face and asked to categorize it as happy, angry, sad, or fearful. The ED group (n = 31) was compared to a PC group with similar psychiatric conditions but no eating disorder history (n = 48) and to HCs with no psychiatric history (n = 48). Groups did not differ in gender, education, or age (ps > .05). A repeated measures ANOVA was conducted to examine reaction times and accuracy. The three groups differed in overall reaction time, but not accuracy (p < .05). The PC and ED groups exhibited slower reaction times for all emotion categories, relative to the HC group. (ps < .05). The ED and PC groups were equivalent in their reaction times for all emotions, with the exception of anger, for which the ED group responded significantly more slowly, relative to the PC group. These findings are consistent with previous literature indicating that those with history of eating disorder experience deficits in facial emotion processing, particularly with anger, which may be indicative of threat-related processing bias. Moreover, the present study is unique in that it accounts for psychiatric comorbidity and includes an analysis of reaction times to emotionally differential stimuli, which provides a subtle and ecologically valid measure of emotion processing.

## **80 Examining the Relationship between Emotion Regulation Difficulties, Eating Expectancies, and Eating Disorder Symptoms in Men**

*Jason M Lavender, M.A., University at Albany, SUNY, Albany, NY; Drew Anderson, PhD, University at Albany, SUNY, Albany, NY*

Research has shown a link between disordered eating and emotion regulation difficulties among males and studies have also revealed an association between eating expectancies and disordered eating among males. The purpose of the current investigation was to examine the relationship between the emotion regulation difficulties, eating expectancies, and eating disorder symptoms in men. Specifically, it was hypothesized that eating expectancies would contribute unique variance in predicting eating disorder symptoms above and beyond the variance accounted for by relevant covariates (BMI and negative affect) and emotion regulation difficulties. Undergraduate men (N = 135) completed the Eating Disorder Diagnostic Scale (EDDS), the Difficulties in Emotion Regulation Scale (DERS), the Eating Expectancy Inventory (EEI), and the Positive and Negative Affect Schedule (PANAS). A hierarchical regression analysis revealed that together, the four

predictors accounted for 27% of the variance in eating disorder symptoms, with eating expectancies uniquely accounting for approximately 7% of the variance. In examining the contribution of the individual subscales of the DERS and EEI in predicting eating disorder symptoms, the DERS subscales of nonacceptance, lack of impulse control, and lack of adaptive emotion regulation strategies emerged as unique predictors, while only the lack of control factor of the EEI contributed unique variance. While many of the subscales of the DERS and EEI are conceptually similar, as well as significantly correlated, the multidimensional constructs of emotion dysregulation and eating expectancies appear to be distinct and uniquely predictive of eating disorder symptoms in men.

## **81** **The Association between Locus of Control and Motivation to Change Among Patients with Anorexia Nervosa**

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The role of locus of control (LOC) in the development and maintenance of Anorexia Nervosa (AN) is debated. Research findings are mixed regarding whether individuals with AN adopt an external or internal LOC and it remains unclear which style is linked to improved motivation for change and treatment outcomes. We used existing data from a retrospective chart review of 240 inpatients with AN to examine the relationship between two questions from the Beck Depression Inventory (BDI-I) obtained at hospital admission which were used as proxies for LOC and motivation to change after patients restored their weight. The BDI questions assessed feelings of being punished (external LOC) or self-blame (internal LOC) for one's illness. Motivation to change was assessed using three questions from the YBC Obsessive Compulsive Scale for Eating Disorders, which ask patients the degree of effort they put forth to resist preoccupations and the degree of control over and desire to change preoccupations. The sample had a mean BMI of 15.3 kg/m<sup>2</sup> at admission and 19.64 kg/m<sup>2</sup> at discharge. 56.8% of the patients were classified as binge-purge subtype. Results indicated that admission scores on the BDI self-blame question were significantly associated with patient's report of their degree of control over preoccupations at 90% ideal body weight ( $r = .333, p = .020$ ). This self-blame item was not correlated with the YBC motivation to change questions at admission ( $r = .207, p = .137$ ;  $r = .171, p = .220$ ;  $r = -.128, p = .360$ ), suggesting these are distinct constructs. These data indicate that those individuals who endorsed an internal LOC at hospital admission were better able and more willing to control their preoccupations at discharge, indicating greater motivation to change. Additional data on clinical correlates of LOC and motivation to change will be presented. This association suggests the need for further research on cultivating an internal LOC to increase motivation to change during treatment for AN.

## **Risk Factor Research and Prevention**

### **82** **Examination of the Sociocultural Attitudes Towards Appearance Questionnaire-3 in a Mixed-Gender Young Adolescent Sample**

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Thin-ideal (or media) internalization is an important eating disorder risk factor that has become a central target of many programs seeking to prevent eating disorders. However, evidence for its valid assessment in young, mixed-gender, adolescent samples is very limited, and the current study is the first to explore the psychometric properties of the Sociocultural Attitudes Towards Appearance Questionnaire-3 (SATAQ-3) in a non-adult community sample. Six hundred and eighty Grade 8 (M age = 13.68 years, SD = .39) girls (N = 332) and boys (N = 348) completed the SATAQ-3 and other measures, while a smaller sample (N = 123) of Grade 10 females (M age = 15.01 years, SD = .41) served as a comparison group. Exploratory factor analyses revealed a similar but slightly different solution to the original authors, where some cross-loading occurred between the Pressures and Internalization – General scales. Confirmatory factor analyses were conducted on both the factor solution found in the current study and the original solution (Thompson et al., 2004), with fit indices favouring the original version. Examinations of validity were favourable, while there was some evidence of Internalization – General being the more important scale for females while Internalization – Athlete may be of more importance to males. While the overall findings generally support the use of the SATAQ-3 with this younger, mixed gender demographic, test-retest reliability was of concern and could limit the validity of the SATAQ-3 over long-term eating disorder prevention trials.

### **83** **Social Appearance Anxiety Mediates and Moderates the Relationship between Loneliness and Eating Disorder Dysfunction**

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The purpose of the current study was to examine the relationship between loneliness, social appearance anxiety, body dissatisfaction, and drive for thinness. Both correlational and experimental research has found support for the idea that loneliness leads to eating dysfunction (Masheb & Grilo, 2006; Tuschen-Caffier & Vögele, 1999), and may contribute to relapse in patients with an eating disorder (Stewart, 2004). Loneliness has also been associated with social anxiety (Leary, 1990). Social appearance anxiety (i.e., fear of evaluation of one's appearance) is a domain of social anxiety that explains variance in eating dysfunction over and above more frequently studied domains of social anxiety (Levinson & Rodebaugh, under review). In the current study ( $n = 95$ ; data collection continues), we hypothesized that social appearance anxiety would better explain the relationship between loneliness and eating dysfunction because high levels of isolation may lead to anxiety when in social situations. Loneliness was significantly associated with social appearance anxiety, body dissatisfaction, and drive for thinness ( $r_s = .25$ -.49,  $p < .001$ ). Bootstrapping analyses indicated that social appearance anxiety carried the indirect effects of loneliness on body dissatisfaction (95% CI = .095 to .376,  $p < .001$ ). In multiple regression, there was a significant interaction between social appearance anxiety and loneliness predicting drive for thinness (part  $r = -.29$ ,  $p = .008$ ). Exploration of this interaction revealed that loneliness explains more variance in drive for thinness when social appearance anxiety is low. These results suggest that loneliness may exert its effect on eating dysfunction partially through social appearance anxiety. Exposure therapies that address social appearance anxiety may decrease both loneliness and eating dysfunction. Additionally, these results suggest that loneliness may be a risk factor for eating dysfunction only when social appearance anxiety is low.

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### **Eating Pathology and Female Sibling Relationships: Social Comparison and Competition between Sisters**

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The present study expanded upon current research on risk factors for eating pathology by exploring the predictive power of and correlations between variables of social comparison and competition with a sister. Seventy-one women responded to measures of general social comparison, social comparison with a sister, physical-appearance-related social comparison, general competitiveness and competitiveness with a sister, as well as a measure of eating pathology. The results suggest that competitiveness with a sister and physical-appearance-related social comparison are correlated with eating pathology. In addition, competitiveness with a sister is a significant predictor of eating pathology, and explained 30% of the variance in eating pathology in this sample. Implications for treatment and assessment are discussed.

## 85

### **Longitudinal Study of Symptoms Associated with Eating Disorders**

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The aim of this study was to examine changes in symptoms associated with eating disorders include: fasting, binge eating, compensatory behaviors, drive for thinness, and body dissatisfaction over 3 years (5 measurements, one each semester) in a community sample. The Mexican versions of the Eating Attitudes Test (EAT), the Body Shape Questionnaire (BSQ), the Bulimia Tests (BULIT) and the Interview for Diagnosis of Eating Disorders (IDED) were completed for female students ( $n = 159$ ) who were recruited from a public university. The mean age of total sample was  $19.49 \pm 1.28$  years and the mean of BMI was  $24.1 \pm 3.58$ . The data analysis revealed no change in the variables evaluated over time. However, it was observed that an important percentage of participants reported disordered eating behaviors. Grant sponsor: CONACyT Grant number: U 50305-H

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### **Pubertal Timing, Status, and Duration: Differential Influences on the Association between Eating Disordered Attitudes and Negative Affect among Eating Disordered and Non-eating Disordered Adolescent Girls**

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Theoretical models posit that an association among eating disordered attitudes and negative affect influences eating disorder (ED) onset and maintenance. Adolescence is a critical time for the development of such risk factors, which are often linked through pubertal maturation in nonclinical samples. Yet, the influence of puberty is not well understood in ED samples and quality of pubertal measurement varies widely. This research investigates associations among disordered attitudes, multiple measures of puberty, and negative affect in a clinical sample of adolescent girls and matched controls. It was hypothesized that pubertal maturation would moderate the association between disordered attitudes and negative affect for girls with ED, but not controls. Adolescent girls with ED ( $n = 51$ ;  $M = 15.79$  yr,  $SD = 1.32$ ) were recruited from a medical clinic and matched to controls on age, race, and SES ( $n = 51$ ). Measures of pubertal maturation (Timing [early or on-time] calculated with menarcheal age; Status per Tanner breast stages III-V by physical exam; Duration per gynecologic age), eating disordered attitudes (Drive for Thinness, Thin Ideal Internalization, Body Image Investment),

and negative affect were collected. Disordered attitudes and negative affect were significantly correlated for the ED group only ( $r$ 's = .30-.47). Disordered attitudes and negative affect were higher for ED girls; pubertal measures did not differ by group. Hierarchical regressions were run separately by group to test for moderation. For Duration, results showed significant negative Attitude x Duration interactions for all attitudes for ED girls ( $p$ 's < .05) but not controls. For Status, a significant negative Internalization x Status interaction was observed ( $p$  < .05) for ED girls only. Results indicate that lower pubertal status (but not timing) and shorter pubertal duration accompanied by high levels of disordered attitudes were associated with the highest levels of negative affect for ED girls.

**87**

### **School Nurses' Knowledge , Attitudes and Feelings to the Eating Disorders**

*Tomoyo Mitsui, PhD, Kobe Shinwa Women's University, Kobe-shi; Kaeko Nomura, PhD, University of Fukui, Fukui-shi; Teruko Ikuno, BM, Naniwa Ikuno Hospital, Osaka*

School nurses can play an important role in early detection and management of students with eating disorder (ED) in Japanese school settings. The purpose of this study was to examine the relationship between Japanese school nurses' knowledge, attitudes and feelings to the ED students. The sample included 130 school nurses (mean age=41.13) from Kansai region of Japan, completed questionnaires measuring knowledge, attitudes, feelings and support experiences to the ED (AN/BN) students. The majority of school nurses knew the diagnostic criteria for AN except for BN, but fewer knew of the physical complications for BN. There were two factors in the attitudes measure regarding AN, 'AN-personal responsibility' and 'AN-severe and chronic' factor. For the attitudes to the BN, there were three factors, 'BN-personal responsibility', 'BN-optimism' and 'BN-treatment efficacy and chronic' factor. In the feelings measure regarding AN/BN, there were two factors for each disorders, 'AN/BN-understanding and coping with difficult' factors and 'AN/BN-embarrassment and pain' factors. Multiple regression analysis was used to test for moderating and mediating effects. 'AN-understanding and coping with difficult' feelings were found to be associated with 'AN-personal responsibility' attitudes. Support experiences for ED students were related to 'AN-embarrassment and pain' feelings, which in turn were associated with 'AN-severe and chronic' attitudes. And knowledge about the diagnostic criteria was associated with 'BN-understanding and coping with difficult' feelings, which in turn were associated with 'BN-personal responsibility' attitudes. Increased knowledge and support experiences for ED students resulted in understanding and coping with ED students, which led to decrease stigmatizing attitudes to the EDs. There is a need for education of school nurses regarding the diagnosis, the physical complications for ED, and how to support the ED students in the school settings.

**88**

### **Within-Team Communication About Food and Weight Among Female Collegiate Cross Country Runners**

*Emily Kroshus, MPH, Harvard School of Public Health, Boston, MA; Bryn Austin, ScD, Harvard School of Public Health/Children's Hospital Boston, Boston, MA*

The purpose of this study was to determine how team-level communication about weight and eating are related to restrained and disordered eating among female collegiate cross country athletes. Participants were female athletes from four NCAA division 1 cross country teams ( $n=90$ ). Consenting participants completed written surveys (comprised of previously validated scales including the Eating Disorder Inventory [EDI], Three Factor Eating Questionnaire, Friends as a Source of Influence Scale, Appearance Conversations with Friends Scale, Perceived Athletics Pressures Scale, Perceived Friend Preoccupation with Weight and Dieting Scale and Friend Anti-Dieting Advice Scale). Participants also completed an open ended written reflection on what they considered to be the most important influences on their eating within the team dynamic. Linear regression was used to analyze the survey results, with dependent variables of EDI or restraint score. Open ended reflections were analyzed qualitatively, using grounded theory and line by line coding for emergent themes. Results suggest that teammates may be important influences on the way individuals think about eating and weight, but that this influence is rarely verbalized or explicit. Rather, the influence appears to be implicit: modeled, and referent to the faster team members. Results suggest that even when explicit/verbal communication about weight and eating is "healthy", implicit messages about these issues may be related to eating pathology among team members. Development of a written survey measure to better assess this construct is recommended.

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### **Boarding School Body Image Project: Implementation and Initial Satisfaction and Acceptance**

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The goals of this work are to describe the implementation of an eating disorder prevention program and to assess satisfaction and acceptance of the program. This work is part of an effectiveness study for a peer-led eating disorder prevention program in a boarding school community. The current program was adapted from the Body Project (Eric Stice & Katherine Presnell) and Reflections: Body Image Program (Carolyn Black Becker) to enable high school seniors and juniors to deliver the intervention. Using a conceptual model of implementation research (Proctor et al., 2009),

suggested implementation strategies (e.g. organizational and supervision) and implementation outcomes (e.g. acceptance and feasibility) are reported. Peer leaders (n = 8), group members (n = 17), and staff members (n = 2) participated in this phase of research. Overall, the program was widely accepted by staff and students, with favorable ratings of the program and its suitability to the school. Initial implementation of the program was successful, requiring the coordination of multiple systems within the target (boarding school) environment. Future goals of this project are to assess adherence to the program by peer leaders and effectiveness of intervention goals.

## **90 Appearance-Oriented Internet, Magazine, and Television Media: Relation with Eating Disorder Symptomatology in College Women**

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Research has identified a relation between viewing thin-ideal magazine and television media images and eating disorder pathology. However, few studies have examined the potential influence of internet media on eating disorder symptomatology. This study investigated the associations among media exposure (internet, magazines, and television), body dissatisfaction and thin-ideal internalization. Specifically, a sample of 421 female undergraduate students completed self-report measures of magazine, television, and Internet use, as well as measures of body dissatisfaction (Eating Disorder Inventory - Body Dissatisfaction), disordered eating (Eating Disorder Inventory - Bulimia and Drive for Thinness subscales), self-esteem (Rosenberg Self-Esteem Scale), and thin-ideal internalization (Sociocultural Attitudes Towards Appearance Questionnaire-Third Edition). The sample had a mean age of 19.2 (SD = 2.81), and ethnic diversity with 51.3% Caucasian, 22.1% African-American, 8.3% Asian-American, 7.8% multiracial, and 6.7% other. Descriptive analyses indicate that undergraduate women spend the vast majority of their media time with various appearance-oriented Internet sources, compared to reading fashion magazines (4:1). Moreover, consumption of appearance-oriented Internet was more strongly associated with eating disorder pathology than the other appearance-oriented media assessed (television and magazines). Further, the relation between Internet use and body dissatisfaction was mediated by thin-ideal internalization. These results are consistent with previous research highlighting the vulnerability individuals high in thin-ideal internalization might have following media exposure. They also suggest that Internet media, although not well-studied to date, might be an important source of media to address in prevention and treatment.

## **91 Evaluating a "Shared-Risk Factor" Approach to Prevention in a School Community**

*Shannon B Ross, MEd, University of Calgary, Calgary, AB; Shelly Russell-Mayhew, PhD, University of Calgary, Calgary, AB; Niki Whitefield, BA, University of Calgary, Calgary, AB*

The prevention of eating disorders (EDs) and obesity (OB) are often perceived as two distinct issues; however, recent studies have postulated the advantages of addressing these issues simultaneously. This pilot study examined a school-based prevention program targeting EDs and OB concurrently by addressing five shared risk factors (dieting, weight-based teasing, body image, self-esteem, and media) through classroom-based interventions and teacher training. Forty-one students between the ages of 12 and 15 completed measures of body satisfaction, internalization of media ideals, eating attitudes and behaviours, experiences of teasing, self-esteem, and developmental assets pre, post, and three months following exposure to the prevention program. A multivariate repeated measures design was used. Initial trends suggest a decrease in the internalization of media ideals, increased acceptance of others' body types, and an increase in the perception of developmental assets three months following the intervention. Trends also suggest positive changes in body satisfaction, self-esteem, eating attitudes and behaviours, perception of teasing, and self-esteem immediately following the prevention program. These preliminary findings suggest there may be short-term benefits from an integrated ED and OB prevention program. Further evaluation of this prevention program is currently underway with a larger sample of junior high students.

## **92 Olfactory and Taste Functions in Anorexia Nervosa**

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Introduction: Although olfaction and taste play an important role in the selection of food and the control of food intake, very few studies have investigated olfactory and gustatory function in eating disorders. The aim of this study was to

compare both sensorial functions in AN patients and healthy controls. Methods: The Sniffin' Sticks olfactory test and the Taste Strips gustatory test were administered to 32 AN patients and 32 healthy eating controls. All the subjects were females and were diagnosed according to DSM-IV criteria. Assessment measures included additionally the TCI-R, the EDI-2, the SCL-90-R as well as a number of other clinical and psychopathological indices. Results: Significant differences were found in odour threshold among the groups ( $p < .05$ ), with AN patients showing higher scores. No differences were found in basic odour identification or odour discrimination between AN and controls. Taste functions were not significant different among the groups. Conclusions: Our study suggests that taste and olfactory function of AN patients are unaltered. Therefore, when analyzing conditioning responses in front of food in AN, additional cognitive and emotional models should also be considered.

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### **Dieting Strategies and Eating Behaviors in Women in 1982, 1992, and 2002**

*Lauren A Holland, BS, Florida State University, Tallahassee, FL; Tiffany Brown, BA, Florida State University, Tallahassee, FL; Pamela Keel, PhD, Florida State University, Tallahassee, FL*

Previous research indicates that dieting frequency decreased significantly among college women from 1982 to 2002. The present study sought to examine trends in specific dieting strategies and eating behaviors from 1982 to 2002 in this same college population to provide a more fine-grained analysis of population-based dieting trends that may impact health and risk for eating disorders. Secondary analyses were conducted using survey data from a sample of college-aged women in 1982 ( $n = 624$ ), 1992 ( $n = 566$ ), and 2002 ( $n = 542$ ), collected as part of an epidemiological study of health and eating behaviors. Across cohorts, specific dieting strategies followed a fad like trend, such that there was a significant effect of cohort for low fat ( $p < .001$ ), low calorie ( $p < .001$ ), low carbohydrate ( $p < .001$ ), and high protein diets ( $p < .001$ ). Specifically, popularity of a low fat diet peaked in 1992, being endorsed significantly more frequently than in both the 1982 ( $p < .001$ ) and 2002 cohorts ( $p = .001$ ), while popularity of both low carbohydrate and high protein diets was significantly lower in the 1992 cohort than the 1982 ( $p < .001$ ) and 2002 cohorts ( $p < .001$ ). Finally, frequency of eating breakfast, lunch, and dinner, eating alone, eating with others, and eating at parties, were significantly higher in the 2002 cohort than the 1982 and 1992 cohorts (all  $p$  values  $< .001$ ) which may partially explain increased BMI across cohorts. These data support that specific dieting strategies have fluctuated among young adults over time independently of overall frequency of dieting. Implications of potentially unhealthy dieting fads for late adolescent and young adults will be discussed.

## **Treatment**

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### **Predicting Acceptance of Intensive Treatment and Participation in a Randomized Control Trial of Medication Among Women with Anorexia Nervosa**

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This study's objective is to determine the generalizability of a randomized control trial (RCT) of anorexia nervosa (AN), and specifically to identify whether psychological variables predict participation in an RCT of the efficacy of olanzapine in the treatment of AN. 106 women with AN were offered intensive treatment in a tertiary care centre. 76 women who accepted intensive treatment, 69 of whom had available data, were approached to participate in an RCT of olanzapine's efficacy as an adjunctive treatment for AN. 45% of these women participated in the RCT. AN subtype and pre-treatment general and eating disorder psychopathology were used to predict acceptance of intensive treatment and olanzapine RCT participation. AN binge purge subtype, and higher depression and body dissatisfaction controlling for AN subtype predicted acceptance of intensive treatment. No variable predicted RCT participation. Women with AN restricting type and/or lower levels of depression and body dissatisfaction may be at higher risk of refusing intensive treatment. Outcomes also suggests that results from an RCT of medication for AN could be generalizable to those who accept intensive treatment.

**95**

### **How Do We Define Recovery in Adult Bulimia Nervosa? The Use of the Eating Disorder Examination Global Score and Abstinence from Bingeing and Purging to Define Recovery**

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Purpose: To create novel definitions of recovery for bulimia nervosa (BN) that consider both psychological recovery and physical recovery. Treatment studies of BN have traditionally used abstinence from binge eating and purging to report recovery. Abstinence from these behaviors can be categorized as physical features of the disorder, but to truly consider an individual recovered, there must be abstinence from the psychological features – the disordered thinking – as well.

**Subject Sample and Statement of Methods:** Eating Disorder Examinations (EDEs) were collected at baseline, post-treatment, and 1-year follow up from 103 individuals who met DSM-IV criteria for purging or non-purging BN entered into a randomized clinical trial at Cornell University, the University of Minnesota, the University of North Dakota, and Stanford University. The analysis, which is currently in progress, will focus on abstinence from bingeing or purging over the last 28 days (reported by the EDE and defined as the disorder's physical features) and the global score of the EDE (psychological feature). Both a statistical t-test controlling for demographics and a chi-squared test for categorical data will be employed.

**Results:** The percentage of participants recovered at post-treatment and follow-up will be examined using (1) abstinence from bingeing or purging over various increments in the past 28 days, (2) the EDE global score within 1 and 2 standard deviations of normal, and (3) combinations of 1 and 2. All definitions will be compared to explore the appropriateness and usefulness of such recovery definitions.

Our hypothesis is that the combination of abstinence and global score will yield a lower number of recovered individuals than abstinence or global score alone; however, the combination will give us a better predictor of sustained recovery from post-treatment to follow-up.

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### **Recruitment and Retention in an Adolescent Anorexia Nervosa Treatment Trial**

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The aim of this study was to investigate recruitment and retention for a randomized controlled trial (RCT) of adolescent anorexia nervosa (AN), as prior studies suggest that these can be significant hurdles to completing meaningful RCT's looking at eating disorder treatments. There has been much discussion about the difficulty of recruiting and retaining adults with AN to RCT's. On the other hand, reports of adolescent eating disorder RCT's are slightly more optimistic about the potential to successfully recruit and retain this population. It is imperative that similar analyses of recruitment and retention among adolescent eating disorder samples be done in order to inform future RCT's and the dissemination of information about adolescent eating disorder treatment to the general population. Retrospective analyses of recruitment and retention rates were conducted for a multi-site RCT of family-based treatment (FBT) vs. adolescent-focused therapy (AFT) recruiting adolescents between 12 and 18 years of age with AN. Adolescent participants were recruited from a variety of both medical and non-medical sources; however, the majority of treatment referrals came from medical sources. Overall, recruitment goals were met in time (October 2004 – March 2007). Percent retention rates were high across both treatment types (84% for FBT and 92% for AFT), and these rates did not differ significantly. These results reveal that recruitment and retention of adolescents with AN in RCT's is feasible in contrast to the experience in adult studies. One caveat, however, is that several aspects of this treatment trial likely made for maximal success with recruitment and retention, which other sites may not be able to replicate, namely the two study sites are nationally known and highly specialized treatment facilities, exclusion criteria made for a less severely ill sample, and the treatments being tested were both outpatient treatments.

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### **Aripiprazole in Patients with Mood Lability, Borderline Personality Traits, and Bulimic Symptoms**

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This poster presents two case reports of patients with eating disorders and comorbid psychiatric conditions that were successfully treated with the off-label use of aripiprazole. Most research on atypical antipsychotics has focused on olanzapine, quetiapine and risperidone; little research has focused on aripiprazole. Case 01 is a 42-year old diagnosed with Eating Disorder NOS, Major Depression, Generalized Anxiety Disorder, and Alcohol Abuse. At admission to the inpatient unit, this patient had engaged in daily restriction of caloric intake to 800-1000 calories, bingeing and purging, daily consumption of 5 diet pills, and drinking up to a bottle of wine per day. Case 02 is a 24-year old with Eating Disorder NOS, Bipolar Disorder, and Borderline Personality traits. This patient engaged in purging 10 times per day, food restriction, and abuse of diet pills prior to admission. Case 02 also revealed a history of an abusive relationship, rape, and legal problems. Unlike previously reported cases with aripiprazole (Trunko, Schwartz, Duvvuri & Kay, 2010), these patients did not respond to a trail of antidepressants. We observed a significant improvement in eating disorder and mood symptoms only after aripiprazole was started. Symptoms returned when aripiprazole was prematurely discontinued by these patients. Symptoms improved once again when aripiprazole was restarted. As illustrated by these cases, aripiprazole may be effective with stabilizing mood and decreasing eating disordered symptoms in patients with mood lability, traits of Borderline Personality Disorder, and bulimic tendencies. The decreased metabolic effects of aripiprazole also make this medication more attractive to patients with eating disorders than other antipsychotics. Controlled studies

are needed to understand the efficacy of aripiprazole in patients with complex eating disorders, especially in comparison to other medications and in combination with psychotherapy.

## **98** **Behavioural Response to Intensive Treatment for Eating Disorders: Rapid vs. Slow Response to Symptom Interruption and Adherence to the Meal Plan**

*Traci McFarlane, PhD, University of Toronto and University Health Network, Toronto, ON; Royal Sarah, MA, Ryerson University, Toronto, ON; Kathryn Trottier, PhD, University of Toronto and University Health Network, Toronto, ON; Marion Olmsted, PhD, University of Toronto and University Health Network, Toronto, ON*

Individuals who respond rapidly to intensive eating disorder treatment have been shown to have lower relapse rates. It has been suggested that a quick behavioural response to treatment is conducive to making permanent change. It may be that engaging in pro-recovery behaviour quickly and successfully creates a transformed reality in which change seems like a possibility. It also may be that there are pre-existing differences between rapid responders (RR) and slow responders (SR) that account for the more favourable treatment outcome observed in RR. The purpose of this study was to determine whether RR and SR can be differentiated based on pre-existing levels of perfectionism, depression, drive for thinness, body dissatisfaction, interpersonal distrust, weight-based self-esteem, and/or motivation. Eight-seven participants who responded to intensive treatment were included. Both speed of adherence to the meal plan, and speed of bingeing/vomiting interruption were used as response variables. For both symptom interruption and adherence to the meal plan, a multivariate analysis of variance revealed that RR and SR did not differ on any measure. These data suggest that all patients could potentially benefit in the long term from quickly interrupting their symptoms. This highlights the need to encourage and motivate patients, particularly in the early days of intensive treatment, to embrace the meal plan completely and attempt to gain immediate control of their symptoms.

## **99** **Theoretical Mechanisms of Action In Maudsley Family Therapy: Is There Overlap with Exposure Therapy?**

*Thomas B Hildebrandt, PsyD, Mount Sinai School of Medicine, New York, NY; Terri Bacow, PhD, Mount Sinai School of Medicine, New York, NY; Katharine Loeb, PhD, Mount Sinai School of Medicine, New York, NY*

The objective is to review literature lending support to the hypothesis that exposure to feared foods/eating may be a novel mechanism of change in Maudsley family-based therapy (FBT) for anorexia nervosa (AN). Literature covering similarities between anorexia nervosa (AN) and anxiety disorders will be reviewed and the theoretical basis for exposure as a therapeutic component of FBT will be discussed. We argue that (1) fear, worry, and disgust are central to AN pathology, and that fear conditioning is one mechanism by which fear of eating and fat may develop, (2) the interventions most effective in ameliorating pathological forms of fear include various forms of exposure therapy, (3) parent-facilitated weight restoration in the context of FBT shares many commonalities with exposure therapy, and (4) changes in fear of eating may be central to the success of FBT. In summary, we conclude that one of FBT's mechanisms of action is a generalized exposure to feared foods, weight, and social contexts. We propose that FBT may succeed in achieving the habituation to a range of feared stimuli not accessible or targeted in traditional treatments for AN. Future directions for family-based interventions with AN are discussed.

## **100** **Integrative Cognitive Behavioral Therapy for Adolescents with Bulimia-Spectrum Disorders**

*Rebecca Shingleton, AB, Boston University, Boston, MA; Jolie Weingeroff, MA, Boston University, Boston, MA; Kamryn Eddy, PhD, Massachusetts General Hospital, Boston, MA; Dana Satir, MA, Boston University, Boston, MA; Elizabeth Pratt, PhD, Boston University, Boston, MA; Heather Thompson-Brenner, PhD, Boston University, Boston, MA*

Few studies have investigated treatment methods for bulimia spectrum disorders in adolescents. In this study, we present data from two studies concerning the use of integrative versions of cognitive behavioral therapy (CBT) with adolescents with BN-spectrum disorders. In the first investigation, N=45 self-reported CBT clinicians described patients' characteristics and the treatment interventions. BN was diagnosed in n=22 cases and EDNOS-BN in n=23; 44% had co-occurring major depressive disorder. Mean patient age was 16.5 years old. Analyses showed that the top ten most frequently employed interventions included ED symptom-focused interventions, but also interventions addressing problems with emotional and interpersonal functioning, suggesting clinicians in the community employ a more integrative approach to this group. Furthermore, three core interventions from the Enhanced CBT (CBT-E) manual (Fairburn, 2008)—self-monitoring, prescription of regular eating, and in-session weighing—were infrequently employed. In the second investigation, a pilot study of N=7 adolescents with BN-spectrum disorders aged 18-21 were treated as part of a larger randomized controlled trial (RCT) comparing CBT-E to another treatment. Analyses of this small adolescent sample receiving manualized CBT-E showed significant improvement in BN symptoms: 50% of those with outcome data (N = 6) self-reported two weeks of abstinence from binge eating and purging at end-of-treatment, and the remaining 50% self-reported a only 1-3 binge or purge episodes over the last two weeks. Attrition was minimal. While both sets of data are clearly limited, pilot data suggest a) clinicians in the community treating adolescents with BN-spectrum disorders employ a broad version of CBT; b) CBT clinicians in the community often do not utilize core interventions from the CBT manual;

and c) the CBT-E treatment manual employed in the context of a RCT shows initial indications of benefit to this adolescent population.