

Oral Scientific Paper Session I
Thursday, April 28, 2011
4:00 to 5:30 p.m.

Assessment & Classification I – Room
Moderator: Pam Keel, PhD, FAED

Satiety Differences between Purging Disorder and Bulimia Nervosa

Lindsay P Bodell, BA, Florida State University, Tallahassee, FL; Pamela Keel, PhD, Florida State University, Tallahassee, FL

Individuals with purging disorder (PD) exhibit differences in physiological responses to food intake compared to individuals with bulimia nervosa, purging subtype (BNp). However, no studies have used an ad lib test meal to objectively measure satiation or to examine subjective ratings of hunger and fullness in individuals with PD. The current study examined satiation and subjective responses to food intake in women with PD (n=18), BNp (n=17), and healthy controls (n=12). Participants consumed a standardized breakfast and completed a single-item ad lib test meal as part of an ongoing study examining satiety responding in PD and BNp. Participants also completed subjective ratings immediately before and after the test meal. Food intake differed among groups ($p=.009$) such that BNp consumed significantly more than PD but neither group differed from controls. On pre-meal subjective ratings, controls reported greater hunger compared to PD; however, group differences on food consumption remained after controlling for pre-meal hunger and fullness. After adjusting for differences in food intake, there were no group differences in post-meal fullness ($p>.05$), suggesting all groups followed meal instructions to eat until they felt full. PD and BN had greater post-meal nausea ($p<.001$), stomach ache ($p=.004$), and desire to vomit ($p<.001$) compared to controls. Results suggest that individuals with PD have increased satiation compared to individuals with BNp, and that food consumption leads to increased nausea, stomach ache, and desire to vomit in eating disorders compared to controls – with a primary difference being that individuals with PD require less food than BNp to trigger urges to purge. Results further support PD and BNp as potentially distinct disorders and highlight that increased negative responses to food consumption may play a role in subsequent purging behavior in PD and BNp.

Following the training, participants will be able to:

- Describe differences in food intake between individuals with purging disorder and bulimia nervosa
- Examine subjective responses to food intake in individuals with purging disorder and bulimia nervosa
- Reflect on the differential diagnosis between purging disorder and bulimia nervosa

Evaluation of the Diagnostic Criteria for Anorexia Nervosa Using Item Response Theory

Tom Hildebrandt, PsyD, Mount Sinai School of Medicine, New York, NY; Christina Roberto, MS, Yale University, New Haven, CT; Robyn Sysko, PhD, New York State Psychiatric Institute/Columbia University, New York, NY; Laurel Mayer, MD, New York State Psychiatric Institute/Columbia University, New York, NY; Evelyn Attia, MD, New York State Psychiatric Institute/Columbia University, New York, NY

Background: In the majority of research studies, patients with anorexia nervosa (AN) are classified based on the DSM-IV diagnostic criteria. However, few studies have examined the psychometric properties of the criteria using modern statistical techniques. The aim of the current study was to evaluate the DSM-IV diagnostic criteria for AN using item response theory. Methods: The sample included 182 inpatients with AN, 47 inpatients with EDNOS and 59 Normal Controls. Eating disorder severity was calculated using two-parameter logistic item response theory (2PL IRT) modeling and traditional one parameter latent trait models using the Eating Disorder Examination (EDE) diagnostic items for AN along with the Restraint and Eating Concern subscales and duration of illness. Comparisons between models were made

using Bayesian Information Criterion (BIC) with items evaluated through an examination of discrimination and difficulty parameters and by plotting individual information curves. Results: The 2PL IRT model provided a superior fit to the data, with the individual item parameters suggesting that the majority of items had desirable discrimination parameters for use in diagnosis. Menstruation had the least desirable discrimination properties. Most items clustered around an average severity suggesting that the EDE diagnostic and clinical items provide little information about individuals with a high or low degree of eating disorder severity. The information curves confirmed the specificity of the DSM-IV diagnostic criteria for individuals of average eating disorder severity. Duration of illness proved to be a significant predictor of eating disorder severity ($\beta = 7.73$, $SE = 0.62$, $p < .001$). Discussion: The psychometric performance of the diagnostic items indicated that these criteria provide the most information at an average level of eating disorder severity with menstruation providing the least information and weight status providing the most information.

Following the training, participants will be able to:

- Describe the psychometric properties of the 4 diagnostic criteria for anorexia nervosa
- Distinguish between diagnostic criteria that provide a lot of diagnostic information versus those items that provide little diagnostic information using information curves.
- Report the value of a dimensional approach to diagnosis in those with anorexia nervosa.

Latent Structure of Adolescent Eating Disorders

Kamryn T. Eddy, PhD, Massachusetts General Hospital / Harvard Medical School, Boston, MA; Alison Darcy, PhD, Stanford University, Palo Alto, CA; Ross Crosby, PhD, Neuropsychiatric Research Institute, Fargo, ND; John Ruscio, PhD, The College of New Jersey, Ewing, NJ; Rebecka Peebles, MD, The Children's Hospital of Philadelphia, Philadelphia, PA; Kathleen Kara Fitzpatrick, PhD, Stanford University, Palo Alto, CA; David Herzog, MD, Massachusetts General Hospital / Harvard Medical School, Boston, MA; James Lock, MD, Stanford University, Palo Alto, CA; Daniel le Grange, PhD, University of Chicago, Chicago, IL

Objective: To utilize latent profile analysis (LPA) and taxometric analysis to examine the latent structure of the current diagnostic system of adolescent eating disorders.

Method: We applied LPA and taxometric analysis to an outpatient sample of adolescents ($n=716$; mean age $15.2 \pm 2.2y$; range 7-19y) seeking treatment for eating disorders through specialty clinics at the University of Chicago and Stanford University. Participants met DSM-IV criteria for anorexia nervosa (AN; $n=284$), bulimia nervosa (BN; $n=76$), or eating disorder not otherwise specified ($n=356$). Eating disorder indicators were selected from the Eating Disorder Examination to represent DSM-IV diagnostic criteria. Clinically relevant cross-sectional indices were considered in validation analyses.

Results: A 3-profile LP solution provided the best fit to the data: LP1 ($n=231$) resembled AN characterized by low weight, extreme weight/shape cognitions, and excessive exercise, LP2 ($n=238$) resembled BN characterized by normal weight, bingeing, and purging, and LP3 ($n=247$) included mostly low weight youth with minimal eating disorder psychopathology. LP membership demonstrated moderate concordance with DSM-IV diagnosis ($\chi^2(4)=226.7$, $p<.001$). Cross-sectional differences in depressive symptoms and self-esteem were identified. Preliminary taxometric analyses suggested that LP1 lies on a continuum with LP2 and LP3 but suggested a categorical distinction between LP2 and LP3.

Discussion: Empirically-derived categories resemble broadly defined DSM-IV categories of AN and BN but suggest the presence of an additional low-weight group who endorsed less typical eating disorder psychopathology. Implications for DSM-5 will be discussed.

Following the training, participants will be able to:

- Describe challenges in applying DSM-IV diagnostic criteria for eating disorders to adolescent clinical samples
- Examine a range of statistical strategies (including latent profile analysis and taxometric analysis) to empirically derive alternative classification schemes.
- Consider incremental value of empirically-derived classification systems compared to DSM-IV in adolescents.

Comparison of DSM-IV vs. Proposed DSM-5 Diagnostic Criteria for Eating Disorders: Reduction of EDNOS and Validity

Pamela K Keel, PhD, Florida State University, Tallahassee, FL; Tiffany Brown, BA, Florida State University, Tallahassee, FL; Jill Holm-Denoma, PhD, University of Denver, Denver, CO; Lindsay Bodell, BA, Florida State University, Tallahassee, FL

Revised eating disorder (ED) diagnostic criteria have been proposed for the DSM-5 to reduce the preponderance of EDNOS and increase the validity of diagnostic groups. The current study compares DSM-IV and proposed DSM-5 diagnostic criteria on number of EDNOS cases and validity. Participants (N=397; 91% female) completed structured clinical interviews in a two-stage epidemiological study of EDs. Interviewers did not follow standard skip rules, making it possible to evaluate alternative ED diagnostic criteria. Using DSM-IV vs. DSM-5 criteria, 34 (14%) vs. 48 (20%) had AN, 43 (18%) vs. 44 (18%) had BN, and 163 (68%) had EDNOS vs. 20 (8%) had BED and 128 (53%) had EDNOS, respectively, reflecting a significant decrease in EDNOS. Validation analyses supported significant differences among groups with some improvement associated with delineation of BED. Proposed revisions to EDs in the DSM-5 significantly reduced reliance on EDNOS without loss of information.

Following the training, participants will be able to:

- Describe proposed revisions to eating disorder diagnostic criteria for the DSM-5.
- Evaluate the success of proposed revision on reducing preponderance of EDNOS diagnoses in an epidemiological sample.
- Assess the impact of changes on indicators of concurrent validity for diagnostic groups.

Classification Of Eating Disorders in a Cohort of Adolescents Using Latent Class Analysis

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Using prospective data from an ongoing cohort study of adolescents, the Growing Up Today Study, we sought to empirically derive an eating disorder classification scheme among female subjects ages 9-24 years. Using latent class analysis for 2 year age groups (9-10 through 23-24), normal weight and overweight/obese subjects were assigned to class membership based on the likelihood of their response profile to the following variables: a 3-level variable for overeating (<monthly overeating, ≥monthly overeating with no loss of control ["overeating"], ≥monthly overeating with loss of control ["binging"]), ≥monthly purging, high concern about shape or weight, and overweight/obesity. The 2-class solution of the entire sample (n for age groups: 3161-11400) produced a "normal" class (80-90% of sample) and a less common "disordered" class which included frequent weight and shape concern and all endorsers of overeating, bingeing, and purging. We conducted a subanalysis among symptomatic participants (n for age groups: 177-2030). Participants were defined as symptomatic if they endorsed one or more of the following: ≥monthly overeating (without loss of control), ≥monthly bingeing (overeating with loss of control), ≥purging, or high concern about shape or weight. The subanalysis produced a 3-class solution. Overeating and binge eating was common in latent class 1 (LC1). Purging was endorsed by nearly all individuals in latent class 2 (LC2). Individuals in latent class 3 (LC3) had high concern about shape and weight but low levels of other symptoms. Prevalence of overweight/obesity did not differ widely between classes. Similar 3-class patterns emerged for all age groups, but frequencies differed by age. For all ages, LC3 was most the common class (≥60%). Prevalence of LC1 was lower in adolescents ages 9-16 (13%-17%) compared to older adolescents ages 17-24 (17%-20%). LC2 was uncommon in early adolescents ages 9-12 (<10%), but was nearly 20% in later adolescents.

Following the training, participants will be able to:

- Describe the prevalence of an empirically-derived "disordered" class among female subjects ages 9-24
- Qualitatively describe empirically-derived eating disorder classes among symptomatic female subjects ages 9-24
- Quantitatively describe empirically-derived eating disorder classes among symptomatic female subjects ages 9-24

Examining Subgroups of Anorexia Nervosa by Self-Reported Lifetime Symptoms: A Comparison of Binge Eating, Purging, Binge Eating/Purging, and Restricting Subtypes

Carol B. Peterson, PhD, University of Minnesota Medical School, Minneapolis, MN; Sonja Swanson, ScM, Harvard School of Public Health, Department of Epidemiology, Boston, MA; James Mitchell, MD, University of North Dakota School of Medicine and Health Sciences, Fargo, ND; Scott Crow, MD, Department of Psychiatry, University of Minnesota Medical School, Minneapolis, MN; Ross Crosby, PhD, Neuropsychiatric Research Institute, Fargo, ND; Daniel Le Grange, PhD, The University of Chicago, Chicago, IL; Laura Hill, PhD, The Center for Balanced Living, Worthington, OH; Pauline Powers, MD, Department of Psychiatry, University of South Florida, Tampa, FL

The purpose of this investigation was to examine differences among subtypes of anorexia nervosa (AN) based on self-reported lifetime history of binge eating, purging, and restriction. A sample of 2966 clinic patients were administered the Eating Disorder Questionnaire (EDQ) to assess eating disorder and associated symptoms. From the full sample, 347 individuals met proposed DSM-5 criteria for AN and were divided into four groups: Restricting (n=118) who reported no lifetime history of binge eating or purging; Binge Eating (n=118) who reported a lifetime history of binge eating but no history of purging; Purging (n=53) who reported a lifetime history of purging but no history of binge eating; and Binge Eating/Purging (n=133) who reported a lifetime history of binge eating and purging. Groups were examined on measures of demographics, weight history, body image, treatment history, and substance use. Results indicated group differences in current BMI ($p=.0008$) and highest adult maximum BMI ($p=.02$) with the Restricting group reporting the lowest of each. Group differences were also observed for lifetime amenorrhea ($p=.002$) with the Binge Eating/Purging group reporting the highest percentage (73%) and the Purging group reporting the lowest (38%). Group differences were also found for the intensity of fear of weight gain ($p < .0001$) with the Binge Eating/Purging group highest and the Restricting group the lowest. Finally, group differences were found for percentage who reported ever smoking ($p=.01$) with the Binge Eating/Purging group the highest (49%) and the Restricting group the lowest (28%). In general, EDQ scores for the Binge only and Purge only groups fell in between the Restricting and Binge Eating/Purging groups. Results of this investigation provide empirical support for the current classification of AN and do not indicate that further subgrouping by lifetime history of binge eating only and purging only would add to meaningful subtyping.

Following the training, participants will be able to:

- Describe subtypes of anorexia nervosa based on self-reported lifetime history of binge eating and purging
- Assess differences among anorexia nervosa subgroups on measures of demographics, weight history, body image, and substance use
- Describe implications of subgroup differences based on lifetime history of binge eating and purging to DSM-5

Assessment & Classification II – Room **Moderator: Steve Wonderlich, PhD, FAED**

Why We Need a Staging Model for Anorexia Nervosa

Stephen William Touyz, PhD, Clinical Psychology Unit, Sydney, New South Wales; Sarah Maguire, School of Psychology, University of Sydney; Daniel Le Grange, Department of Psychiatry, University of Chicago; Louis Surgenor, Department of Psychological Medicine, University of Otago; Peta Marks,

Department of Psychological Medicine, University of Sydney; Hubert Lacey, School of Medicine, University of Sydney

In a recent editorial, McGorry argued that “clinical staging is a proven strategy whose value is clear in the treatment of malignancies yet it has not been explicitly endorsed in psychiatry” (Am. J. Psychiatry, 2007, 164: 859-860). Moreover, there has been increasing attention in the literature to the conceptualization of anorexia nervosa (AN) and its diagnostic criteria. Varying levels of severity within the illness category of AN is a concept long appreciated by the scientific community. However, neither a precise definition of severity nor a subsequent empirical examination of severity in AN have been undertaken. Objectives: This paper will review the current state of knowledge in stages of illness, and to propose a theoretical model for the definition and conceptualisation for severity in AN. AN is associated with significant medical morbidity which is related to the ‘severity’ of presentation on such markers as BMI, eating and purging behaviors. The development of a functional staging system, based on symptom severity, is indicated for reasons similar to those cited by the cancer lobby. Improving case management and making appropriate treatment recommendations have been the primary purpose of staging in other fields, and might apply to AN as well. Such a standardised staging system could potentially ease communication between treatment settings, and increase the specificity and comparability of research findings in the field of AN.

Following the training, participants will be able to:

- Examine the classification of anorexia nervosa
- Describe a new approach to classify anorexia nervosa
- Present a new instrument to classify anorexia nervosa

Defining Outcome in Eating Disorders: Alternate Conceptualisations of Remission and Recovery

Karina Allen, PhD, University of Western Australia, Crawley, WA; Anthea Fursland, PhD, Centre for Clinical Interventions, Northbridge, WA; Sharon Byrne, MPsych (Clinical), Centre for Clinical Interventions, Northbridge, WA; Marilyn Fitzgerald, PhD, Centre for Clinical Interventions, Northbridge, WA; Hunna Watson, PhD, Centre for Clinical Interventions, Northbridge, WA; Paula Nathan, MPsych (Clinical), Centre for Clinical Interventions, Northbridge, WA; Susan Byrne, PhD, University of Western Australia, Crawley, WA

There have been few attempts to operationalise and empirically validate remission and recovery criteria for eating disorders. This research aimed to apply alternate conceptualisations of remission (full and partial) to data collected from female outpatients who attended treatment for a DSM-IV eating disorder. The research represents Stage 1 of a broader project that is focusing on remission and recovery criteria for the full range of eating disorders. Participants in this stage (N=35) were recruited from a specialist, state-wide eating disorder service in Western Australia and were assessed at pre-treatment, post-treatment and 3-month follow-up. At post-treatment and 3-month follow-up, four criteria sets were applied to categorise participants as symptomatic, in partial remission or in full remission: (1) Kordy et al.’s (2002) remission criteria for anorexia nervosa (AN) and bulimia nervosa (BN); (2) Pike’s (1998) remission criteria for AN; (3) Couturier and Lock’s (2006) remission criteria for AN; and (4) DSM-IV diagnostic criteria. When necessary, criteria sets were modified to account for all forms of eating disorders (i.e., AN, BN and eating disorders not otherwise specified). The four definitions differed in their relative emphasis on physical (e.g., BMI), psychological (e.g., weight and shape concern) and behavioural (e.g., purging) symptoms. Results varied considerably depending on the criteria applied. The percentage of participants classified as in full or partial remission ranged from 29% to 65% at post-treatment and from 19% to 61% at 3-month follow-up. Remission rates were lowest with Pike’s (1998) criteria and greatest with Kordy et al.’s (2002) criteria. The stability of remission categories over time was greatest with Pike’s (1998) and DSM-IV criteria. These results highlight the importance of developing standard definitions for remission and recovery in the eating disorder field, and provide initial transdiagnostic data to facilitate this process.

Following the training, participants will be able to:

- Summarize the current literature relating to remission and recovery criteria for eating disorders

- Apply alternate criteria sets for remission and recovery to clinical data
- Consider the relative advantages of alternate criteria sets for remission and recovery, in terms of the range of symptoms assessed and the stability of classification over time

Diagnostic Issues of Binge Eating in Eating Disorders

Andreas Birgegård, PhD, Karolinska Institutet, Stockholm; Claes Norring, PhD, Karolinska Institutet, Stockholm; David Clinton, PhD, Karolinska Institutet, Stockholm

Recent studies have focused on the DSM diagnostic criteria for eating disorders (ED), which are problematic and due to be revised. The present study investigated the concurrent and prognostic validity of four aspects of binge eating (binge size, loss of control, plus frequency of objective and subjective binge eating) that had been assessed by self-report questionnaire and interview among adult ED patients. Dependent variables were concurrent and follow up self-report measures of ED symptoms, associated psychological symptoms, psychiatric symptoms, and negative self-image. Data came from two independent naturalistic Swedish databases (N=2354, with 12-month follow-up; and N=597, with 36-month follow-up). Results showed fair concurrent validity of criteria assessed using self-reports, but poor concurrent validity of interview assessment, and no prognostic validity of any aspect of binge eating, regardless of assessment method. The findings have implications for the diagnostic criteria for binge eating and their measurement.

Following the training, participants will be able to:

- The participant will be able to identify problems in binge eating criteria in DSM-IV
- The participant will be able to contrast interview and self-report methods for binge eating assessment
- The participant will be able to discuss concurrent and prognostic validity aspects of aspects of binge eating

Exploratory and Confirmatory Factor Analyses of the Attitudes toward Emaciation Scale

April R Smith, M.S., Florida State University, Tallahassee, FL

The goal of the present study is to examine the construct validity of a self-report questionnaire—the Attitudes Toward Emaciation (ATE) scale—designed for use in research on disordered eating and the nature of the thin ideal. Emerging evidence indicates that some people value emaciation over thinness, yet to our knowledge no self-report measures of attitudes toward extreme thinness and emaciation exist. Latent variable modeling was used with three samples to examine the construct validity and psychometric properties of the ATE. Results indicate that the latent structure of the ATE is best represented by three latent constructs: attraction to underweight, preference for emaciation, and disgust with overweight, with four items measuring each construct. Finally, the ATE demonstrated modest positive correlations with several measures of eating disorder pathology, providing evidence for convergent validity and support for the differentiability of the scale from related scales.

Following the training, participants will be able to:

- Describe the Attitudes Towards Emaciation Scale and its subscales.
- Discuss how the Attitudes Towards Emaciation Scale could be used in research and clinical settings.
- Describe how EFA and CFA techniques were used to develop this novel scale.

Diagnostic Convergence of the Interview and Questionnaire Versions of the Eating Disorder Examination

Kelly C Berg, PhD, The University of Chicago, University of Minnesota, Minneapolis, MN; E. Colleen Stiles-Shields, MSW, The University of Chicago, Chicago, IL; Sonja A. Swanson, ScM, Harvard School of Public Health, Boston, MA; Carol Peterson, PhD, University of Minnesota, Minneapolis, MN; Jocelyn

Lebow, MS, Illinois Institute of Technology, Chicago, IL; Daniel Le Grange, PhD, The University of Chicago, Chicago, IL

The Eating Disorder Examination (EDE) and the Eating Disorder Examination-Questionnaire (EDE-Q) are two of the most widely used assessments of eating disorder (ED) symptoms. The two instruments are nearly identical and scores on the EDE and EDE-Q are significantly correlated. However, it is unclear whether the same diagnoses are generated by the EDE and EDE-Q. Thus, the purpose of the current study was to examine the diagnostic convergence of the EDE and EDE-Q. 182 adolescents and young adults seeking ED treatment at The University of Chicago Medical Center completed the EDE and EDE-Q prior to the start of treatment and on the same day. Using items from the EDE and EDE-Q, individuals were classified into one of five diagnostic groups: Anorexia Nervosa, Bulimia Nervosa, Binge Eating Disorder, Eating Disorder Not Otherwise Specified (EDNOS), or No ED. Separate diagnoses were generated for the EDE and EDE-Q using the DSM-IV-TR and proposed DSM-5 criteria. The sensitivity of the EDE-Q to detect the EDE diagnoses ranged from 18.2% to 84.3% for the DSM-IV-TR criteria and 30.8% to 80.2% for the DSM-5 criteria. The specificity of the EDE-Q ranged from 47.8% to 98.3% for the DSM-IV-TR criteria and from 62.3% to 98.2% for the DSM-5 criteria. The overall diagnostic concordance of the EDE and EDE-Q was moderate, with kappas of 0.40 and 0.52 for the DSM-IV-TR and DSM-5 criteria respectively. Additionally, it is notable that the prevalence of EDNOS as diagnosed by the EDE only decreased from 74.4% to 66.5% when using the DSM-5 criteria rather than the DSM-IV-TR criteria. Similarly, when using the EDE-Q, the prevalence of EDNOS decreased from 76.1% (DSM-IV-TR) to 65.9% (DSM-5). Overall, there are significant discrepancies between the diagnoses generated by the EDE and EDE-Q. Although using the proposed DSM-5 criteria improved the diagnostic concordance of the EDE and EDE-Q slightly, the majority of participants assessed by the EDE and EDE-Q were still diagnosed with EDNOS.

Following the training, participants will be able to:

- Compare eating disorder diagnoses generated by the EDE and EDE-Q.
- Integrate diagnostic convergence data with existing research on the convergent validity of the EDE and EDE-Q.
- Discuss advantages and disadvantages of using interview- and questionnaire-based assessments.

Self-reported motives to maintain eating disorders and their association with clinical symptoms among patients involved in a day treatment program

Catherine Bégin, Ph.D., Laval University, Québec, QB; Marie-Pier Chenel-Beaulieu, Baccalaureate, Laval University, Québec, QB; Marie-Pierre Gagnon-Girouard, Ph.D., Laval University, Québec, QB

Considering the complexity of the aetiology and treatment of eating disorders (ED), it is important to investigate more thoroughly the underlying motivations that drive patients to maintain their problematic eating behaviors. Previous works have proposed some classification of the psychological motives that patient attribute to their ED. Notably, Norbø, et al. (2006) have proposed a 8-construct categorization based on the codification of interviews (Security, Avoidance, Mental Strength, Self-confidence, Identity, Care, Communication, Death). However, self-reported motives underlying the ED have never been studied. The present project aims to replicate the categorization of Norbø et al. using self-reported motives, and to examine the association between these categories and eating, clinical, and motivational variables. Eighty-four women involved in a day-treatment program answered questionnaires measuring their eating (EAT-26) and general (BDI-II, BAI) symptoms as well as their motivation toward treatment, and were asked: "What are the personal motives, you have identified this week, and that contribute/maintain your ED behaviors (why do I adopt/maintain these behaviors)?" Self-reported motives were classified according to the Norbø model. Avoidance was the construct more often referred to (44%), especially among bulimic patients, followed by Self-confidence (9,5%) and Mental Strength (7,1%). A factorial analysis was performed to merge some categories that were highly correlated, which yielded a 5-construct classification (Relatedness, Narcissism, Death, Security and Avoidance). The Death dimension was related to higher eating ($p=.045$), depression ($p=.002$), and anxiety ($p=.002$) scores. The Narcissism ($p=.010$) and Security ($p=.019$) concepts were related to lesser motivation toward treatment.

Different self-reported motives for ED may be related to different levels of clinical severity as well as to different motivational issues.

Following the training, participants will be able to:

- Describe a categorization of the psychological motives that patients attribute to their eating disorders.
- Examine the association between the different categories of self-reported motives and eating, clinical, and motivational variables.
- Discuss the importance of considering self-reported motivations in adopting or maintaining problematic eating behaviors.

Athletes, Exercise and Competition – Room

Moderator: Ron Thompson, PhD, FAED

Sport-Specific Aspects of Disordered Eating in Athletes

A.P. (Karin) de Bruin, PhD, Karin de Bruin Sportspsycholoog, Amsterdam

Recent figures have shown that no less than 20% of female athletes and 8% of male athletes suffer from clinical or subclinical eating disorders (Sundgot-Borgen & Torstveit, 2004). The number of athletes suffering from disordered eating, a broader concept, could be even larger.

Whereas common risk factors (e.g. negative body image, self esteem) contribute to the development of dieting and weight control behaviors in the general population, in sports these disordered eating behaviors seem to be particularly related to factors concerning the sport-specific drive for performance enhancement. This presentation will show how eating disorders manifest themselves (differently) in the population of elite athletes. More specifically, the highlights of studies of De Bruin et al. into disordered eating in Dutch female and male athletes will be presented to illustrate the role of factors such as achievement motivation, athletic body image, weight-related beliefs of success and failure, perceived weight-related coach and peer pressure, and athletic identity. Finally, alternatives for general diagnostic tools that include sport-specific variables will be discussed. In conclusion, as sport-specific variables seem to make a large contribution to disordered eating in athletes, prevention and counseling should be characterized by a multidisciplinary approach in which the athletic environment (coaches, staff and team mates) is included.

References

Sundgot-Borgen, J. & Torstveit, M. (2004). Prevalence of eating disorders in elite athletes is higher than in the general population. *Clinical Journal of Sport Medicine*, 25-32.

De Bruin, A.P. (Karin) (2010). Thin is going to win? Disordered eating in sport. PhD Thesis VU University Amsterdam.

Following the training, participants will be able to:

- Discuss how eating disorders in athletes manifest themselves differently than in non-athletes.
- Identify the role of several sport-related risk correlates of disordered eating in athletes.
- Reflect on more effective prevention, identification and treatment programs for athletes including sport-specific variables.

Female Athletes and the Sport Environment: Positive and Negative Influences on Body Image and Weight Management in USA Division III Female Athletes

Nora Erickson, BA in Psychology, Kenyon College, Minneapolis, MN; Michael P., Ph.D., FAED, Kenyon College, Gambier, OH

The positive effects of athletic participation for girls and young women are well-documented, but participation in certain sports at more elite levels of competition is a risk factor for negative body image and disordered eating. Consequently, we examined the effects of potentially positive and negative influences within the athletic environment on body image and weight management in nearly 300 female varsity athletes recruited on-line from six Division III colleges and universities in Ohio. They completed

questionnaires assessing body image, weight management, dieting frequency, and sources of pressure and support from coaches, teammates, and the sport itself (e.g., sport-specific body ideals, uniforms). It was found that numerous sources provide potentially unhealthy messages about weight and shape, and athletes reporting cumulative, simultaneous pressures reported more body concern, a higher frequency of dieting, and all types of weight management behaviors, including healthy weight management. There was only limited evidence for the role of support from teammates and coaches in relation to healthy body image and weight management behaviors. Multiple regression analyses indicated that relationships between pressures within the sports environment and negative body concerns were partially mediated by increased adherence to, and social comparison with, sport-specific weight and shape ideals, as well as a decreased sense of body empowerment. However, trait self-objectification was not a mediator. These results are discussed in terms of implications for prevention and for improving theory and research on the impact of teammates, coaches, sport-specific body ideals, and form-fitting, revealing uniforms. Results also indicate that weight and shape pressures from the athlete environment may operate in ways that diverge from other societal influences on body image and weight management behaviors in the general population of young women.

Following the training, participants will be able to:

- Describe the complex relationship between sports participation, body image, and eating disorders
- Describe how specific factors in the sports environment predict negative body image and disordered eating
- Describe what we do and don't know about which positive influences on body image are operating in competitive athletics

Obligatory Exercise, Body Dissatisfaction, and Eating Pathology: A Meta-Analysis

Natasha L Burke, Master of Arts, University of South Florida, Tampa, FL; Natasha Burke, MA, University of South Florida, Tampa, FL; Lauren Schaefer, BA, University of South Florida, Tampa, FL; Joel Kevin Thompson, PhD, University of South Florida, Tampa, FL

Obligatory (or excessive) exercise has been characterized by consistent exercise even when contraindicated because of injury or medical condition and negative affect associated with exercise (e.g. guilt after missing an exercise session). Researchers have found that obligatory exercise is often correlated with body dissatisfaction and eating pathology. The current study examines these relationships using meta-analytic techniques suggested by Hedges and Olkin. The Obligatory Exercise Questionnaire and the Commitment to Exercise Scale are two psychometrically sound measures of obligatory exercise. We have identified 49 studies that use one of the two measures and that also have one of the following dependent measures: body image dissatisfaction, eating pathology, or general pathology. Several demographic variables will be examined as potential moderators, including gender, age, body mass index, and sample characteristics (e.g. clinical versus community). Based on the current literature, we expect to find significant positive relationships (as measured by Pearson correlation as effect size) between obligatory exercise and body image dissatisfaction and obligatory exercise and various manifestations of eating pathology. In addition, we expect to find higher effect sizes for clinical samples compared to community samples. Implications will be discussed.

Following the training, participants will be able to:

- Summarize the various operational definitions of obligatory exercise and discuss the complexities of measurement
- Explain the relationships between obligatory exercise and important correlates (i.e. body dissatisfaction, eating pathology, and general pathology)
- Debate the clinical implications of obligatory exercise on body dissatisfaction and eating pathology (using the magnitude of the summary effect sizes and the moderation analyses as guides)

Eating Disorders and Competitive Eating: Opposite Sides of the Same Coin?

Deborah Mangham, MD, Melrose Institute, Minneapolis, MN; Joel Jahraus, MD, Park Nicollet Melrose Institute, Minneapolis, MN; Beth Brandenburg, MD, Park Nicollet Melrose Institute, St. Louis Park, MN

Eating contests have been part of carnival side shows and county fair Americana for decades. Pies and hot dogs were the usual bill of fare. Contestants were neighbors and family with no particular training or expertise, it was pretty innocent and folksy. This all changed in 1997 when Nathan's Famous Coney Island Hot Dog Stand hired a brazen pair of brothers to market the annual Fourth of July Hot Dog Eating Contest. The brothers successfully ratcheted up the hype such that the prize money, numbers of participants, and audience numbers markedly increased. As a result of the huge financial success enjoyed by Nathans, there have been many copy cats. There are now 100+ eating competitions per year, there are professional competitive eaters with international ranking, there is an overseeing body, "Major League Eating", and there is television network affiliation with ESPN. We recently treated a patient with anorexia nervosa binge purge subtype who was also a competitive eater. He stated, somewhat sardonically, "I love to binge eat, so I might as well get paid for it". We describe his case history including dangerous practices used to "train" for a competition, the experience of the competitive binge, and his compensatory mechanisms. Although never officially acknowledged by the governing body or the competitors, we will describe the compensatory behaviors utilized by other participants. We will enumerate the many potentially serious medical complications of the training, the binge, and the compensatory practices. We will detail the challenges of motivating towards recovery when recovery means ceasing to compete. Lastly, we will report on our first hand experience attending an eating competition. What began in the early 1900's as a guileless county fair spectacle has evolved into a dangerous and potentially pathological avocation which legitimizes many eating disorder behaviors.

Following the training, participants will be able to:

- List 3 competitive eating practices which mimic eating disorder behaviors.
- Weigh the pros and cons of oversight or regulation of eating competitions
- Describe how to motivate a competitive eater with a clinical eating disorder to embrace recovery.

Activity-Based Anorexia Evokes an Increased Expression of Alpha4/Beta/Delta GABA-A Receptors At Excitatory Synapses of the Hippocampus

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The purpose of this study was to utilize an animal model to test our hypothesis that the increased vulnerability of girls to anorexia nervosa (AN), particularly at puberty, might be due to the increased propensity of hippocampal neurons to express $\alpha 4$ -subunits of GABAA receptors (GABARs). Although GABARs comprised of the $\alpha 1$, β and γ -subunits dominate the hippocampus in adulthood, the hippocampus of females entering puberty exhibit a sharp rise of GABARs comprised of the $\alpha 4$ and δ subunits. This rise at puberty is specific to the vicinity of excitatory synapses of pyramidal neurons, where it exerts shunting inhibition and, thus, depression of hippocampal excitability. The rise of these GABARs has been implicated in the impairment of hippocampus-dependent memory formation but also of the restoration of memory function under conditions of stress, due to desensitization mediated by the neurosteroid stress hormone, THP, upon these receptors. If so, then rise of these GABARs may have an adaptive role of maximizing memory function during stressful situations. However, since hippocampus is part of the limbic circuit, restoration of hippocampal excitability during stress could also exacerbate anxiety. Electron microscopy was used to directly visualize excitatory synapses in the hippocampus and immunocytochemistry to probe for the presence of $\alpha 4$ -subunits. Activity-based anorexia (ABA) was induced in pubertal female rats by rearing them for 3 to 4 days in the presence of a running wheel and limited food access. Quantitative analysis revealed that $\alpha 4$ -immunoreactivity is consistently elevated near excitatory synapses in the hippocampus of ABA animals, compared to the levels found in the hippocampus of control animals (wheel-only, food-restriction-only, or no treatment). These findings support our hypothesis. Moreover, since $\alpha 4\beta\delta$ GABARs are insensitive to benzodiazepines, these findings predict that benzodiazepines may not be efficacious for treating females during puberty, particularly with AN.

Following the training, participants will be able to:

- Demonstrate knowledge of activity-based anorexia, the most valid animal model available for studying the effects of food restriction and hyperactivity on neurobiology.
- Describe neurobiological changes in the GABA system that are associated with adolescent female activity-based anorexia.
- Evaluate how these preclinical findings translate into a better understanding of anorexia nervosa.

Cognition & Neuropsychology – Room

Moderator: Kate Tchanturia, DClinPsy

Increased Ventral Striatal Response to Chocolate Taste in Women Recovered from Anorexia Nervosa

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Individuals with Anorexia Nervosa (AN) appear to find aspects of their disorder rewarding at the expense of normal pleasures. This presents a particular challenge in treatment and remains poorly understood. Recent evidence has shown that even after recovery individuals with AN continue to have an aberrant physiological response to pleasant or rewarding stimuli. The aim of this study was to use functional magnetic resonance imaging to characterise the neural correlates of primary rewards in women recovered from AN (n= 16) compared to healthy controls (n=16). During scanning, the neural response to rewarding (sight and/or flavor of chocolate) and aversive stimuli (sight of moldy strawberries and/or an unpleasant strawberry taste) was measured. Participants simultaneously recorded subjective ratings of “pleasantness,” “intensity,” and “wanting.” It was hypothesized that individuals with a history of AN would show impaired neural responses to a primary rewarding stimulus. More specifically, that there would be between- group differences in reward-relevant circuitry including the ventral striatum, the cingulate cortex, the anterior insula, the ventromedial prefrontal cortex and the medial orbitofrontal cortex. Data analysis is underway and will be completed by December 2010 and full results will be reported.

Following the training, participants will be able to:

- To characterize neural responses to reward in individuals recovered from Anorexia Nervosa.
- To identify differences in subjective stimuli ratings in recovered Anorexia Nervosa compared to healthy controls.
- To consider the role of aberrant reward processing in the onset and maintenance of Anorexia Nervosa.

Concurrent Validation of Neuropsychological Clusters from the Ravello Profile Study

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The Ravello Profile study is a battery to identify whether neuropsychological impairments consistently identified in Anorexia Nervosa group together to form distinct neuropsychological profiles. Preliminary analysis shows five distinct factors of neuropsychological functioning (verbal ability, central coherence, visuospatial memory, problem solving, and cognitive flexibility) and three clusters of performance (normal neuropsychological profile, weak central coherence profile and a generalised abnormal neuropsychological profile). This suggests that neuropsychological test performance may be a more reliable way of categorising patients with eating disorders than current systems. The aim of this study is to investigate whether the identified factors and clusters of neuropsychological performance correlate with differing clinical presentations. Twenty patients with a diagnosis of Anorexia Nervosa underwent Ravello assessment. The Ravello Profile clusters were compared with the clinical presentations. Initial examination of the data suggests good concurrent validity between key clinical features and the Ravello Profile clusters. This has important clinical implications. It is possible that the relatively poor prognosis is

due to the failure to address in treatment the different neuropsychological profiles. For example, those patients with neuropsychological deficits may benefit from novel treatments such as CRT.

Following the training, participants will be able to:

- Understand of the Ravello Profile study and its application in assessing neuropsychological profiles in Anorexia Nervosa.
- Good understanding of the validation process of a neuropsychological battery
- Neuropsychological impairments may have an important clinical implication thus using novel treatments like CRT may improve outcome

Neurocognition in Bulimic Disorders: an Intermediate Report

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The purpose of this ongoing study is to investigate whether people with a bulimic eating disorder [bulimia nervosa (BN) or Eating Disorder Not Otherwise Specified – bulimic type (EDNOS-BN)] differ from healthy controls (HC) on neurocognitive tasks that assess aspects of attention, inhibitory control and decision-making in conditions of risk. Fifty-one treatment-seeking people with BN (n=30) or EDNOS-BN (n=21) and 46 HC have been recruited so far. The following neurocognitive tasks are administered: 1) the d2 letter cancellation task (attention), 2) the Stroop colour word test (inhibitory control/selective attention), 3) a Go No-Go task (inhibitory control) and 4) the Game of Dice Task (decision-making). Two main comparisons using multivariate analyses of variance were made. First, performance on the tasks was compared between the bulimic disorder group as a whole and the HC group. Secondly, performance in the three groups (BN, EDNOS-BN and HC) was evaluated. Age, intelligence score and mood (Depression Anxiety Stress Scale scores) were added as covariates to the analyses. These preliminary data show that there is no impairment on these neurocognitive tasks in people with BN or EDNOS-BN compared to HC. In conclusion, BN and EDNOS-BN appear not to be associated with a major impairments in neurocognitive functioning. Novel approaches based on subtypes of bulimic disorders may prove more beneficial than investigating all people with a bulimic disorder as one group.

Following the training, participants will be able to:

- Compare neurocognitive functions in people with a bulimic disorder and healthy controls.
- Examine role of mood, anxiety and stress levels on neurocognitive functioning.
- Appraise limitations of the interpretation of neurocognition findings in bulimic disorders.

Experience of Self and Perception of Others: Implications for Empathy in Perception of Affect in Biological Motion Cues in Anorexia Nervosa

Nancy Zucker, PhD, Duke University Medical Center, Durham, NC; Ashley Moskovich, BA, Duke University, Durham, NC; Ryan Wagner, PhD, Duke University Medical Center, Durham, NC; Cynthia Bulik, PhD, University of North Carolina at Chapel Hill, Chapel Hill, NC; Rhonda Merwin, PhD, Duke University Medical Center, Durham, NC

Individuals with anorexia nervosa seem to be perpetually in motion. Such acute awareness of the motive state of their body may have implications for capacities to empathically attune to others. We examine capacities of adult women with AN to assess affect in body motion relative to healthy controls. Sixty-six adult women (21 with current AN (AN-C), 22 weight-restored AN, and 23 controls) viewed Pointlight Walkers (PW), animated displays in which the human form is reduced to small patches of light at major joints, and were asked to indicate the emotional state. Statistical analyses were based on OLS regression models regressing the PW scale averaged over emotion subscales (sad, angry, happy, neutral, afraid) on diagnostic status. In secondary analyses, using the tendency to engage in driven exercise as a proxy for degree of motor movement, effects of exercise-related weight control on perception of sadness were

tested. Main effect for Group in PW total score was marginally significant ($\text{ChiSq}(\text{df}=2)=5.87$; $p=0.05$); contrasts indicated that total PW scores were significantly decreased in the AN-C group relative to the other groups. The main effects for Group were significant among two of the five conditions: Sadness ($\text{ChiSq}(\text{df}=2)=12.74$; $p=0.0004$) and Anger ($\text{ChiSq}(\text{df}=2)=6.69$; $p=0.0352$). Scores for AN-C were significantly decreased after viewing sad images but were increased in the capacity to view anger relative to weight-restored AN and controls. Levels of the PW Sadness measure were also significantly lower among those who endorsed exercise as a means of weight control, irrespective of group status. AN is a state of physical threat and, like any starved animal, the ability to perceive threat can be advantageous as it facilitates escape and adaptive protective mechanisms. Deciphering sadness would be of little advantage as starved organisms are not in a position to care for others. Thus, current results are comprehensible as a biological adaptation to starvation.

Following the training, participants will be able to:

- Describe the role of self-awareness in capacities to empathize with others
- Describe the importance of nonverbal body language in social perception
- Understand adaptive changes that accompany starvation in capacities to perceive affect in others

Emotion Recognition in Anorexia Nervosa: The Interdependence of Neurocognitive Abilities

Ashley A Moskovich, BA, Duke University, Durham, NC; H. Ryan Wagner, PhD, Duke University Medical Center, Durham, NC; Rhonda Merwin, PhD, Duke University Medical Center, Durham, NC; Kevin LaBar, PhD, Duke University, Durham, NC; Cynthia Bulik, PhD, University of North Carolina at Chapel Hill, Chapel Hill, NC; Nancy Zucker, PhD, Duke University Medical Center, Durham, NC

Despite the pervasive nature of social difficulties in anorexia nervosa (AN), the contributing role of social cognitive capacities has been of limited focus. Furthermore, processes that support social perception, such as biases in visually guided attention, have not been explored. This study examined the role of two neurocognitive variables on emotion recognition, biases in local processing, cognitive set-shifting, and their interaction. Stimuli included complex scenes with facial information either visible or occluded. 71 adult female participants [25 with current AN (AN-C), 22 with a history of AN who were weight-restored (AN-WR), and 24 healthy controls (HC)] completed a neuropsychological battery and an emotion recognition task enabling us to derive the influence of facial information on emotion recognition accuracy. Groups were not significantly different on age, IQ, or emotion recognition accuracy. Hierarchical regressions predicting emotion scores were conducted separately for each group. Analyses revealed two significant models for the AN-C group only. In complex scenes without facial information, individuals who exhibited difficulty with cognitive shifts performed better when they also exhibited a local processing bias, $F(3,10)=3.98$, $p=.042$. In contrast, a local bias facilitated facial affect recognition when combined with high set-shifting but decreased accuracy in the presence of low set-shifting, $F(3,10)=4.22$, $p=.04$. Results suggest individuals with AN may be using unique strategies of emotion processing dependent upon individual neurocognitive differences. Such divergent processes are occluded by examination of performance outcomes and may suggest compensatory mechanisms that may lead to novel neurodevelopmental hypotheses. Further research is warranted to inform novel treatments targeting social deficits.

Following the training, participants will be able to:

- Describe the following neurocognitive variables: cognitive set-shifting and biases in local processing.
- Explain the complexities of social perception.
- Differentiate processes versus outcomes in social cognitive tasks.

Binge Eating (Be) Behaviors and Adiposity are Related to Poorer Performance on Measures of Decision Making and Executive Functioning

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PhD, NIH/NIDDK, Phoenix, AZ; Marie Thearle, MD, NIH/NIDDK, Phoenix, AZ; Jonathan Krakoff, MD, NIH/NIDDK, Phoenix, AZ

Recent evidence shows that brain reward systems are similar in those with both eating and addictive disorders. Neurocognitive studies of binge eaters report deficits in complex executive functions and decision making, which may impair their capacity to regulate the impulse for excessive eating. To further investigate this relationship between adiposity, binge eating behaviors (BE), impulsivity and cognitive functioning, we administered the Iowa Gambling Test [IGT] to measure decision making and the Wisconsin Card Sorting Task [WCST] to test executive functioning in a convenience sample from 4 inpatient studies. Healthy volunteers (n=72 [68%male]; 98±20kg [mean ± SD]; %fat 35±15%; age 35±9 y) completed the Gormally Binge Eating Scale (BES), the Questionnaire on Eating and Weight Patterns (QEWP) to assess loss of control eating (LOC) and the Emotional Appetite Questionnaire (EMAQ). A subgroup (n = 19) also completed the Barrett Impulsivity Scale (BIS). Percent body fat was measured by DXA. Body weight (r = 0.27, p = 0.02) and %fat (r = - 0.23, p = 0.05) were significantly correlated with poorer performance on the IGT and WCST, respectively. BES and BIS, but not EMAQ scores were positively correlated with all measures of adiposity (all p > 0.05). There was a trend towards a significant correlation between higher BES scores with poorer performance on WCST (r = 2.0, p = .09). Individuals categorized as impaired on the IGT had higher EMAQ scores (5.0±.7 vs. 4.5±.9; p=.05) and a trend towards higher BIS scores (69±0.7 vs. 56±9, p=.07). Thirty-eight percent of those with LOC eating had impaired IGT scores vs. only 11% of those without LOC eating (OR = 5, p = 0.04). These results suggest relationships between impaired cognitive functioning with impulsivity, BE behaviors and adiposity.

Following the training, participants will be able to:

- Describe measures of decision making and executive functioning
- Describe the relationship between measures of binge eating and cognitive functioning
- Describe the relationship between adiposity and measures of cognitive functioning

Comorbidity – Room

Moderator: Lucene Wisniewski, PhD, FAED

Post Traumatic Stress Disorder in Anorexia Nervosa

Mae Lynn Reyes, PhD, University of North Carolina at Chapel Hill, Chapel Hill, NC; Ann Von Holle, MS, University of North Carolina, Chapel Hill, NC; T. Frances Ulman, PhD, University of North Carolina at Chapel Hill, Chapel Hill, NC; Laura Thornton, PhD, University of North Carolina at Chapel Hill, Chapel Hill, NC; Walter H. Kaye, MD, University of California at San Diego, La Jolla, CA; Cynthia M. Bulik, PhD, University of North Carolina at Chapel Hill, Chapel Hill, NC; Genetics of Anorexia Nervosa Collaborative Group, PhD, MD, University of North Carolina at Chapel Hill, Chapel Hill, NC

Objective: The comorbidity between eating disorders, traumatic events, and post traumatic stress disorder (PTSD) has been reported in several studies. The main objectives of this study were to describe the nature of traumatic events experienced and to explore the relation between PTSD and anorexia nervosa (AN) in a sample of women. Methods: Eight hundred twenty-four participants from the National Institutes of Health funded Genetics of Anorexia Nervosa Collaborative Study were assessed for eating disorders, PTSD, and personality characteristics. Results: From a final sample of 753 individuals, 13.7% (n=103) met DSM-IV criteria for PTSD and 2.9% (n=22) reported one or two symptoms short of a DSM-IV diagnosis of PTSD. In pairwise comparisons across AN subtypes, the odds of having a PTSD diagnosis were significantly lower in individuals with restricting AN (RAN) than individuals with purging AN without binge eating (PAN) (OR=0.49, 95% CI=0.30, 0.80). The majority of participants with PTSD reported the first traumatic event before the onset of AN (64.1%, n=66). The most common traumatic events reported by those with a PTSD diagnosis were sexual related traumas during childhood (40.8%) and during adulthood (35.0%). Conclusions: AN and PTSD do co-occur and traumatic events tend to occur prior to the onset of AN. Clinically, these results underscore the importance of assessing trauma history and PTSD in individuals with eating disorders and raise the question of whether specific modifications or

augmentations to standard treatment for AN should be considered in a subgroup to address PTSD-related psychopathology.

Following the training, participants will be able to:

- To define the relation between anorexia nervosa and post traumatic stress disorders.
- To identify the nature of traumatic events experienced by women with anorexia nervosa.
- To describe the clinical implication about the co-occurrence of post traumatic stress disorders in anorexia nervosa patients.

Developing a Model of Suicidal Behavior in Eating Disorders

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Joiner's (2005) Interpersonal Psychological Theory of Suicide (IPTS) may provide a useful framework to explain the high rate of suicide among individuals with eating disorders. The IPTS predicts that high levels of perceived burdensomeness, low levels of belongingness, and acquired capacity for lethal self-injury converge to produce death by suicide. In this study the three IPTS theory constructs will be explored in individuals with eating disorders. Participants are 112 eating disorder patients from the Magnolia Creek Treatment Center for Eating Disorders. All participants were interviewed by a trained psychologist to determine eating disorder diagnosis. Additionally, participants completed a battery of questionnaires at treatment admission and discharge. The data for this study have been collected, and we are currently in the process of entering and coding study variables. Data will be entered by the end of October 2010, and analyses will be completed by January 2011. Thus, we are certain that we will be able to present our results by the date of the meeting in April 2011. The data for this study will be analyzed using structural equation modeling (SEM). Model fit will be evaluated by using several criteria (i.e., chi-square, Tucker-Lewis index, comparative fit index, root mean square error of approximation, and standardized root mean square residual). Three latent variables (perceived burdensomeness, low belongingness, and provocative behaviors [a proxy for acquired capability]) will be created to determine whether burdensomeness and belongingness interact to produce suicidal ideation, and whether burdensomeness, belongingness, and painful and provocative behaviors (both eating and non-eating disorder related) interact to predict suicide attempts. It is also predicted that improvements in suicidal ideation from admission to discharge can be explained by the IPTS. Implications and suggestions for future research will be discussed.

Following the training, participants will be able to:

- Explain the occurrence of suicide in eating disorders.
- Describe risk factors for suicidality in eating disorders.
- Apply Joiner's Interpersonal-Psychological Theory of Suicide to eating disorders.

A Twin Model Investigation of the Comorbidity of Binge Eating and Marijuana Abuse and Dependence

Karen S Mitchell, PhD, VA Boston Healthcare System, Boston, MA; Jessica Baker, PhD, University of North Carolina-Chapel Hill, Chapel Hill, NC; Suzanne Mazzeo, PhD, Virginia Commonwealth University, Richmond, VA; Kenneth Kendler, MD, Virginia Commonwealth University, Richmond, VA; Michael Neale, PhD, Virginia Commonwealth University, Richmond, VA

Eating disorders and substance use disorders frequently co-occur. In particular, individuals with bingeing (BE) and purging disorders report elevated rates of marijuana (MJ) abuse/dependence. This association may be due to psychological as well as biological and genetic factors. Typically, biometric comorbidity models assess associations among binary diagnostic variables and do not address subthreshold levels of disorders. The current study aimed to extend previous work by estimating an ordinal comorbidity model of BE and MJ abuse/dependence.

This study investigated biometric models of BE-MJ comorbidity among 1200 female monozygotic (MZ) twins and 871 same-sex female dizygotic (DZ) twins (Mage=35.12, SD = 7.5) from the Virginia Adult Twin Study of Psychiatric and Substance Use Disorders (VATSPUD), a population-based longitudinal study of adult Caucasian twins sampled from the Mid-Atlantic Twin Registry. Ordinal variables representing BE+DSM-IV frequency and duration criteria and DSM-IV MJ abuse/dependence were analyzed. A Cholesky decomposition model assessed whether MJ abuse/dependence thresholds were modified by BE thresholds. This model also estimated sources of variance of BE and MJ, as well as their covariance, due to additive genetic (A), common environmental (C), and unique environmental (E). Variance in BE was due to A ($a^2=.41$, 95% CI: .11, .52) and E ($e^2=.58$, 95% CI: .49, .74); variance in MJ also was due to A ($a^2=.58$, 95% CI: .38, .76) and E ($e^2=.41$, 95% CI: .24, .43). BE-MJ comorbidity was due to A ($acov=.41$, 95% CI: .07, .98) and E ($ecov=.57$, 95% CI: .57, .73) as well. The influence of C was negligible.

Thus, the comorbidity of BE and MJ is influenced by additive genetic and unique environmental factors. Future directions include additional exploration of specific biological and psychological influences, such as trait impulsivity or tendency to self-medicate, on the association of BE and MJ abuse and dependence.

Following the training, participants will be able to:

- Describe the comorbidity of binge eating and marijuana abuse and dependence.
- Integrate information regarding psychological and biological contributions to binge eating-marijuana abuse and dependence comorbidity.
- Recommend future directions for genetic comorbidity research.

Exploring a Track-Based Model for Treating Patients with Co-occurring Eating Disorders While in an Inpatient Psychiatric Hospital

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Due to the high mortality rate and complex presentation of patients with eating disorders, treatment is essential. However, given the current economic climate and downward trend in inpatient length of stay, treatment in a specialized eating disorder program is not always feasible. Therefore, it is prudent to look for additional therapy models while maintaining treatment efficacy. The presentation will comprise the rationale for creating an eating disorder track imbedded in a general psychiatric facility and the process for developing and implementing the track. This model will be compared to traditional forms of care reviewed in the literature. The advantages of this new approach will be addressed including the benefit to patients suffering from eating disorders where a specialty program is not warranted or required and assisting patients who are otherwise reluctant to treat their eating disorder. Also addressed will be a comparison of this approach to existing chemical dependency and trauma tracks. Each track is evaluated based on outcomes data. Preliminary data on the effectiveness of the proposed eating disorder track will be included. We also examine the cost-effectiveness of an inpatient track-based model and its possible generalization to other mental health settings. Furthermore, patients often present to treatment with co-occurring disorders; therefore, we address how a track model integrates a wholistic perspective of treatment where a patient can receive concurrent care for comorbid illnesses.

Following the training, participants will be able to:

- Identify possible benefits and advantages of a track-based treatment model.
- Describe ways in which the Eating Disorder Track compares to other treatment approach, like chemical dependency and trauma tracks.
- Understand the rationale for and aims of an eating disorder track-based model.

Eating Disorder Diagnosis and Comorbidity in a Large Sample of Women Receiving Treatment

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Eating disorders are debilitating conditions that are difficult to diagnose and treat. Accordingly, there is a need for additional research in large samples that can delineate more clearly the characteristic features of eating disorders, as such work may inform prevention and treatment efforts. The present study examines symptom classification, patterns of comorbidity, and sociodemographic variability in a large sample of women (n=2373) in a specialized eating disorders treatment facility in the U.S. (adolescents, n=755; adults, n=1618). The sample was minimally diverse, comprised of white (91.6%, n=2175), Latino (1.98%, n=47), black (0.46%, n=11), Asian, (0.21%, n=5), and American Indian (0.13%, n=3) clients. Eating disorder diagnosis and comorbid conditions were determined through clinical interviews and symptoms/characteristics were assessed with the Eating Disorder Inventory-2. Eating disorder not otherwise specified (EDNOS) was the most common diagnosis (30.8%, n=732), however combined subtypes of anorexia formed the largest patient group (40.9%, n=970). Comorbidity was commonly observed for numerous psychiatric conditions and forms of substance abuse. Specifically, a majority of participants received a diagnosis of major depression, dysthymia, or depression NOS (86.6%, n=2055). Three quarters of participants experienced generalized anxiety disorder or anxiety disorder NOS (75.6%, n=1794). Alcohol was the most widely used substance with one-fifth (20.3%, n=482) of participants exhibiting abuse or dependence. Sociopathy, a construct not studied widely in the context of eating disorders, was observed in 11.2% of the sample. This study provides a unique understanding of women seeking treatment for eating disorders.

Following the training, participants will be able to:

- Assess particular forms of eating disorder pathology and their classification in a treatment-seeking group
- Appraise psychiatric and substance abuse comorbidities for eating disorders
- Evaluate sociodemographic characteristics of treatment-seeking eating disorder clients

Interpersonal Violence Victimization and Perpetration in Adolescents: Associations with Unhealthy Weight Control Behaviors

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Previous research indicates that sexual and physical abuse and violence are associated with disordered eating behaviors among adolescent girls. However, few studies have examined specifically dating violence, both sexual and non-sexual; studies to date have included primarily Caucasian girls; and previous studies have not addressed violence perpetration in addition to victimization. The objective of the current investigation is to evaluate the associations among physical and sexual abuse victimization and perpetration, and weight control behaviors, among a school-based sample of adolescent boys and girls. Participants were 497 male and 606 female students in grades 9 through 12 at a public high school in Southeast Texas. The sample was 42% Hispanic, 23% non-Hispanic black, 26% non-Hispanic white, and 9% other non-Hispanic. Participants completed a questionnaire modeled after the Youth Risk Behavior Survey, including questions on physical and sexual dating violence victimization and perpetration and weight control behaviors (restricting intake, fasting, using diet pills, and vomiting or using laxatives to lose weight). Adjusting for race and grade, diet pill use and vomiting/laxative use were strongly associated with both sexual and physical victimization and perpetration in boys and girls. Sexual and physical abuse victimization were also associated with restricting intake and fasting to lose weight. In summary, violence perpetration, as well as victimization, tend to co-occur with more extreme disordered eating behaviors among both boys and girls, although only victimization was found to be related to less extreme disordered eating behaviors. One potential explanation of the findings regarding violence perpetration and disordered eating is a possible link with impulsiveness. Future research should examine disordered eating

behaviors as related to both perpetration and victimization, and should also include boys in studies of disordered eating behaviors.

Following the training, participants will be able to:

- Describe the prevalence of sexual and physical violence perpetration and victimization among adolescent boys and girls.
- Examine the association between physical and sexual violence victimization and disordered eating behaviors among adolescent boy and girls.
- Examine the association between physical and sexual violence perpetration and disordered eating behaviors among adolescent boy and girls.

Obesity and BMI – Room **Moderator: Kerri Boutelle, PhD**

Psychometric Properties and Clinical Correlates of the Weight Bias Internalization Scale (WBIS) in an Internet Sample of Overweight Adults

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The present study explored the psychometric properties and clinical correlates of the Weight Bias Internalization Scale (WBIS), a new measurement tool that assesses negative weight-based attributions made about oneself. Participants were 656 overweight and obese (mean BMI: 34.3 ± 7.7) adults who completed the WBIS and measures of disordered eating behaviors and attitudes via an online survey. Item-total correlations and a factor analysis of the WBIS yielded a 1-factor scale consisting of 11 out of the original 19 items, replicating the original psychometric findings. The final scale had a Cronbach's α of .91. Partial correlations, controlling for BMI, revealed significant positive correlations between WBIS score and number of lifetime weight fluctuations (≥ 20 lbs) ($r = .18$), depression ($r = .54$), and all EDE-Q subscales (eating, shape, and weight concern, restraint, total score) (r 's = .57, .71, .66, .28, .66), and a significant negative correlation with perceived self-control ($r = -.42$). As assessed by the EDE-Q ($n = 366$), 46 participants met criteria for binge eating disorder (BED), and 20 met criteria for bulimia nervosa (BN) based on DSM-IV criteria. After controlling for BMI, mean WBIS score (range: 1-7) was significantly higher among those with BED (5.5 ± 1.1) and BN (5.9 ± 1.2) as compared to those without an eating disorder diagnosis (4.3 ± 1.4). Logistic regressions were used to determine whether WBIS, BMI, and depression predicted BED, BN, or loss of control over eating (LOC). Analyses revealed that WBIS and BMI, but not depression, were significant predictors of BED status (WBIS: $p = .02$; BMI: $p = .03$). WBIS and BMI also predicted BN diagnosis (WBIS: $p = .01$; BMI: $p = .02$), but not LOC. These novel findings suggest a significant association between weight bias internalization and both BED and BN among overweight adults. More research is needed to clarify the relationship between the internalization of weight bias and the development and maintenance of eating disorders.

Following the training, participants will be able to:

- Demonstrate the role of weight bias internalization in both binge eating disorder and bulimia nervosa.
- Assess the relevant clinical correlates of the Weight Bias Internalization Scale (WBIS) in a sample of overweight adults.
- Confirm the psychometric properties and factor structure of the Weight Bias Internalization Scale (WBIS) in an internet sample of overweight adults.

Readiness to Change for Obese Children Seeking Weight Management Services

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Given that lifestyle change is the standard treatment for overweight youth (Dietz, 2004), patient readiness to change is a salient factor. Prochaska and DiClemente (1992) have proposed five stages to conceptualize stage of change (SOC): 1) pre-contemplation, 2) contemplation, 3) preparation, 4) action, and 5) maintenance. Studies in adults have demonstrated that baseline SOC predicts weight loss, however no studies have assessed its utility in pediatric populations. The current study is a first step towards examining SOC in a pediatric weight management treatment-seeking sample. The Weight Loss Behavior-Stages of Change Questionnaire (WLB-SOC; Sutton, 2003), a self-report measure designed to assess SOC based on target weight control behaviors, was administered to 597 participants (mean age=11± 3.5; 59%female; 79%White; 94%obese) during baseline visits. Descriptive statistics were conducted for the two most important behavior categories: increased fruit and vegetable consumption and physical activity. Chi-squared analyses compared means across SOC. For both behavior categories, distribution of responses in the lower three SOC (pre-contemplation, contemplation, preparation) was significantly higher than in the advanced two SOC (action, maintenance), $\chi^2=187$, $p=0.001$. Children endorsed items in the preparation stage (40.8%; $\chi^2=187$, $p=0.001$) and the pre-contemplation stage (36.5%; $\chi^2=204$, $p=0.001$) for increasing fruits and vegetables and physical activity, respectively. Results indicate that most children presenting for treatment at an outpatient weight management center are not yet in the action or maintenance SOC. This information has important clinical implications as children's SOC may predict weight and highlights the benefits of clinical interventions such as Motivational Interviewing.

Following the training, participants will be able to:

- Describe baseline Stage of Change data in a pediatric weight management treatment-seeking sample
- Assess the role of readiness to change in lifestyle change in overweight youth
- Consider the utility of Motivational Interviewing for overweight children who display ambivalence towards lifestyle change

The Clinical Significance of Depressive Features on Weight Loss and Eating Disorder Psychopathology in Bariatric Surgery Patients

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Objective: This study examined the clinical significance of depressive features in bariatric surgery patients over 24 months of prospective, multiwave follow-ups. **Method:** Three hundred sixty-one gastric bypass surgery patients completed a battery of assessments before surgery and at 6, 12, and 24 months following surgery. In addition to weight loss and depression levels, the assessments targeted eating disorder psychopathology and quality of life. **Results:** Clinically significant depression was defined as a score of 14 or greater on the Beck Depression Inventory. Prior to surgery, 49% of patients reported clinically significant depressive features; postsurgery, this proportion decreased to 13% at 6-month follow-up, 15% at 12-month follow-up, and 21% at 24-month follow-up. Preoperative depressive features did not predict postoperative weight outcomes. In contrast, analyses revealed that postsurgery depression was predictive of weight loss outcomes at 6 months only. Patients with clinically significant depression at 6 months lost significantly less weight at 6 months (25.8% vs. 28.2% loss for the depressed vs. non-depressed respectively). However this effect did not persist to subsequent weight losses (at 12 months and at 24 months). Postsurgery depression at each time point significantly predicted concurrent and prospective quality of life at the subsequent follow up point. Postsurgery depression also predicted a greater degree of concurrent and prospective eating disorder features. **Conclusions:** Postoperative depression is significantly related to poorer weight outcomes at 6-months following surgery although it does not predict longer-term weight outcomes at 12- or 24-month follow-ups. Post-operative depression prospectively predicts poorer quality of life and greater eating disorder psychopathology through 24-months.

Following the training, participants will be able to:

- To gain understanding of patient pre-treatment predictors affecting weight loss outcomes following bariatric surgery.
- To gain understanding of the existing literature on the influence of depression and depressive features on bariatric surgery outcomes.
- To gain understanding of the influence of preoperative *and* post-surgery depression (through 24 months) on weight loss, psychosocial, and eating-related outcomes following bariatric surgery.

Long-Term Follow-up Assessment in Bariatric Surgery: Maladaptive Eating Behaviors and Outcomes

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Background: Bariatric Surgery requires a substantial life style change along the postoperative stage. The presence of maladaptive eating behaviors and other psychological symptoms have been related to poor outcomes. Despite eating patterns tend to change with surgery and through time, little is known about eating problems, compliance with treatment and weight maintenance, at the long-term follow-up of these patients. The purpose of this study is to describe a sample of patients with long-term follow up (>7 years) in terms of weight loss, eating behavior and attitudes related to treatment.

Methods: 13 participants, aged between 28-62 (M=49,77; DP=10, 93), that underwent Laparoscopic Adjustable Gastric, were assessed, in a late post surgical period (>7 years), with a clinical semi-structured interview, the Eating Disorders Examination (EDE), and a set of self report measurements: Eating disordered symptoms (EDE-Q; ODE-Q), Psychological distress (OQ-45), Depressive symptoms (BDI) and Impulsivity (BIS-11).

Results: Preliminary data shows that all the participants gained weight at long term, and reported maladaptive eating behaviours, such as grazing (n=6; 46,2%), lost of control over eating (n=4; 30,8%), and excessive food intake (n=7; 53,8%). Eight (61,5%) participants reported as well plugging and vomiting in the previous month. Patients reported being highly motivated towards treatment, but seem to place themselves between moderate or high levels of satisfaction with outcomes

Conclusions: Since all participants have reported weight regain and maladaptive eating behaviours, long-term assessment seems to be crucial for success, allowing the screening for maladaptive behaviors and the designing of multidisciplinary interventions for enhance compliance with treatment.

Change in Psychosocial Symptoms and Treatment Response in Overweight Children and Their Parents throughout Family-based Weight Loss Treatment

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Childhood obesity is a risk factor for developing future eating disorders and is associated with internalizing symptoms (i.e., depression, anxiety). Family-based behavioral weight loss treatment (FBT) is effective for childhood obesity; however, given that FBT focuses on the parent-child dyad, more data are needed regarding both parent and child factors that influence treatment outcome. Our previous work indicates that baseline child psychosocial impairment hinders treatment response, although scant research has assessed changes in impairment throughout FBT. In terms of parent factors, studies suggest that parent internalizing symptoms are associated with increased child weight and that parent treatment response predicts child outcome. Thus, it is important to investigate how parent and child psychological functioning are associated with each other and with treatment response. We are currently conducting a multi-site RCT to evaluate different weight maintenance approaches following standard 4-month FBT in 240 overweight children (BMI>85th percentile) ages 7-11y. Psychosocial variables are assessed at baseline and post-FBT. Preliminary analyses of child self-reports and parent-reports indicate that approximately one-third of the children experience clinically-significant internalizing problems, a high percentage for a

non-psychiatric sample. The present study aims to elucidate the relations among child and parent internalizing symptoms, the change in symptoms from baseline to post-FBT, and the moderating effect of internalizing symptoms on treatment response. We hypothesize that child and parent internalizing symptoms will: 1) be positively correlated; 2) improve throughout FBT; and 3) predict treatment outcome. Understanding the relations between psychosocial variables and treatment response can enhance childhood obesity treatment, thereby also reducing risk for disordered eating behaviors.

Following the training, participants will be able to:

- Explain the relation between parent and child internalizing symptoms at baseline and after 4-month family-based weight loss treatment
- Discuss how parent and child internalizing symptoms impact weight outcome
- Describe the treatment implications for youth with higher internalizing symptoms who are participating in family-based weight loss treatment

How Do We Calculate Ideal Body Weight in Adolescents with Eating Disorders?

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There is no consensus on how to define ideal body weight (IBW) in adolescents with eating disorders. At least three methods are used to determine goal weight for adolescents: (1) McLaren, (2) Moore, and (3) body mass index percentile (BMI). The purpose of this research was to examine the agreement and discrepancy between these three methods when calculating ideal body weight for adolescents. The sample was comprised of 373 treatment-seeking adolescents ages 12-18 years (mean = 15.84, SD = 1.72), diagnosed with anorexia nervosa (n=130), bulimia nervosa (n=59), or eating disorder not otherwise specified (n=184). Concurrence between the McLaren, Moore and BMI methods was assessed primarily for agreement above or below clinically important IBW cut-points (medical stability = 75%, diagnosis = 85%, and healthy weight = 100%). Patterns of absolute discrepancies were examined by height, age, sex, and menstrual status. Moderate agreement was seen between the three methods (kappas 0.48-0.74), with pairwise total classification accuracy at each cut-point ranging from 84-98%. The most discrepant calculations were observed among the tallest (>75th percentile), shortest (<20th percentile), and older ages (>16 years). Many of the most discrepant cases, when comparing the BMI and Moore methods, fell above and below 85%IBW, indicating disagreement on diagnosis of possible anorexia nervosa. Taken together, these methods largely agree on percent IBW in terms of clinically significant cut-points. However, it seems important to consider the implications of using one method over another when assessing adolescents outside the norm for height or above 16 years of age.

Following the training, participants will be able to:

- Name different methods of calculating ideal body weight in adolescents with eating disorders
- Compare the applicability of various methods of calculating ideal body weight in adolescents with eating disorders
- Critique the relative merits of different methods of calculating ideal body weight in adolescents with eating disorders

Other Topics in Eating Disorders – Room **Moderator: Traci McFarlane, CPsych, PhD**

Late Presentation of Eating Disorders - Same Story or Different Picture?

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This study aimed to investigate the phenomenon of late presentation of eating disorders (\geq age 30). Little is known about the onset and persistence of eating disorders in later life, although the emerging literature

from clinical and community studies suggests that eating disorder psychopathology exists in older age groups, similar to that found in a younger cohort. The study used a database of 297 consecutive referrals (2005-2009) to a community-based specialist eating disorders service in Western Australia. Clinical data were obtained from 84 (28% of the total sample) 'late presentation' patients (those who presented at or after the age of 30). These individuals were compared with a group of 137 (46%) 'middle presentation' patients (between the ages of 20 and 29) and 76 (26%) 'early presentation' patients (between the ages of 16 and 19). At pre-treatment, the 'early' group had significantly fewer purging episodes and a higher rate of AN and Atypical AN than the 'middle' and 'late' groups. The 'late' group scored significantly higher than the 'early' group on a measure of eating for affect regulation. Across treatment there were no significant between-group differences in drop-out or change in eating disorder symptomatology, and at post-treatment there were no significant differences in the proportion of patients in remission. There were remarkably few differences between the groups in terms of comorbidities, general psychopathology and eating disorder symptoms. This study found that eating disorders exist past the age of 30 in over a quarter of a sample of patients presenting to a specialist eating disorders outpatient clinic. The data provide further support for the similarity between late and earlier presentation.

Following the training, participants will be able to:

- Recognize that it is not uncommon to find individuals over the age of 30 presenting with eating disorders
- Identify the differences and similarities in eating disorder psychopathology among early (age 16-19), middle (age 20-29) late (age ≥ 30) presentation
- Summarize the similarities in treatment outcomes in early (age 16-19), middle (age 20-29) late (age ≥ 30) presentation of eating disorders

Phenotypic and Etiologic Associations between Binge Eating and Different Forms of Impulsivity

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The UPPS-P Impulsive Behavior Scale is an empirically-derived measure that distinguishes between impulsive personality traits and aims to understand relationships between these traits and impulsive behaviors (e.g., binge eating). The current study sought to investigate phenotypic associations between the five types of UPPS-P impulsivity (i.e., negative urgency, positive urgency, lack of planning, lack of perseverance, sensation seeking) and binge eating assessed by the Minnesota Eating Behavior Survey. A second aim was to examine the degree to which phenotypic overlap between binge eating and impulsivity constructs is due to genetic or environmental influences. This is the first study to examine etiologic overlap between specific aspects of impulsivity and binge eating. Participants were 232 late-adolescent same-sex female twins from the Michigan State University Twin Registry. Negative urgency was the only UPPS-P scale to significantly predict binge eating after controlling for a number of important covariates (e.g., age, body mass index, negative emotionality, other UPPS-P scales). Bivariate models suggested that both constructs were heritable (25-31%), and that genetic factors significantly contributed to the phenotypic association between negative urgency and binge eating (genetic correlation = .68). In sum, phenotypic results are consistent with past research demonstrating a robust association between negative urgency and binge eating. This is the first study to report that shared genetic effects significantly contribute to the phenotypic overlap between these constructs. Both phenotypic and etiologic findings suggest that negative urgency is a particularly important form of impulsivity for binge eating. Future research should investigate genetic and biological mechanisms (e.g., serotonin function) that underlie associations between negative urgency and binge eating.

Following the training, participants will be able to:

- Recognize that impulsivity is a multi-dimensional construct.
- Differentiate between the different forms of impulsivity and their relation to binge eating.

- Explain the overlap in genetic and environmental factors between negative urgency and binge eating.

Evaluating the Conceptual Model of Integrative Cognitive-Affective Therapy (ICAT) with Ecological Momentary Assessment Data

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Objective: The theoretical model underlying ICAT posits that self-discrepancy (i.e., the disparity between how an individual views themselves versus important comparison standards) is a precursor to eating disordered behavior. The purpose of this study was to evaluate the relationship between momentary self-discrepancy, binge eating and vomiting in individuals with anorexia nervosa.

Method: A total of 118 females with DSM-IV full or sub-threshold anorexia nervosa participated in this study. Structured interviews were conducted to identify idiosyncratic self-discrepancies. Participants then carried handheld devices for a 2-week period, providing momentary idiosyncratic self-discrepancy ratings and reports of binge eating and vomiting 6 times per day in response to random signals. Random regression models were used to evaluate the trajectory of self-discrepancy prior to and after binge eating and vomiting.

Results: Ought self-discrepancy (i.e., the difference between how I am and how I should be) increased prior to vomiting episodes and decreased dramatically immediately after vomiting. Ideal self-discrepancy (i.e., the difference between how I am and how I ideally want to be) also decreased after vomiting. In contrast, self-discrepancy did not change prior to or after binge eating.

Conclusions: These findings provide support for the ICAT model. The results suggest that increases in momentary self-discrepancy serve as a precipitant to vomiting (but not binge eating) and serve to highlight the negative reinforcing effects of vomiting on self-discrepancy.

Following the training, participants will be able to:

- Provide information about the ICAT conceptual model
- Understanding the role of self discrepancy in precipitating eating disorder behaviors
- Understanding the negative reinforcing effects of vomiting on self discrepancy

Lay Theories in Eating Disorders and Obesity - A Comparison of Causal Attributions Across Anorexia Nervosa, Bulimia Nervosa, Binge-eating Disorder and Obesity

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Research indicates that causal beliefs about eating disorders (EDs) and obesity may contribute to the development and maintenance of eating disturbances. Further, stigmatizing attitudes have been shown to be associated with causal beliefs about the etiology of EDs and obesity. However, it is not clear how these causal beliefs may differ across EDs and obesity. Therefore, this study compared causal attributions for the development of anorexia nervosa (AN), bulimia nervosa (BN), binge-eating disorder (BED) and obesity. Participants (N=447) read four vignettes in counterbalanced order, describing a fictional target with either AN, BN, BED (with obesity) or obesity and were asked to rate seven possible causes for each condition on a five-point scale. Several significant differences were found. Genetic factors and parenting were believed to contribute more to the development of BED and obesity than BN and AN. Participants reported that an imbalance of neurotransmitters contributed more to all three EDs than to obesity. Participants stated that media influences have a greater impact on the development of AN than any other condition, but lack of social support was thought to influence the development of AN less than in BN, BED or obesity. Finally, participants reported that lack of self-discipline contributed more to the development of BED and obesity than AN and BN. Thus, participants may believe BED and obesity to be more

controllable or blameworthy than AN and BN. In contrast, participants ascribe more influence to neurotransmitter imbalance in causing EDs relative to obesity. Blame toward those with BED and obesity may put these individuals at greater risk of stigmatization and should be addressed in efforts to prevent and reduce stigma. Further, prevention programs on risk factors for EDs and obesity will have greater impact if they are consistent with individuals' belief systems and therefore these should be addressed in educating the public on EDs and obesity.

Following the training, participants will be able to:

- Describe lay theories on the development eating disorders and obesity
- Understand how causal beliefs and stigma may be related
- Identify ways to address causal beliefs on the development of eating disorders and obesity in prevention programs

Who's to Blame? - A Comparison of Stigma toward Anorexia Nervosa, Bulimia Nervosa and Binge-Eating Disorder Versus Depression

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Studies have shown that individuals with eating disorders (ED) are highly stigmatized. Most of this research, however, examined stigma towards anorexia nervosa (AN) and bulimia nervosa (BN) separately. The present study compares stigmatizing attitudes across all three EDs (AN, BN and binge-eating disorder (BED)) and to stigma toward depression. Participants (N=447) read four vignettes in counterbalanced order, describing a fictional target suffering from either AN, BN, BED (with obesity) or depression. Stigma was assessed using a questionnaire based on previous research. The degree of stigma varied significantly across EDs as well as in comparison to depression. In all three ED conditions, people believed that the fictional target was more "to blame for her condition" than in the depression condition. BN and BED were viewed as a sign of "personal weakness" to a greater extent than depression. BED sufferers were expected to be able to "pull themselves together" more than those with depression or BN. Participants believed that individuals with AN or BN were more likely "to act this way for attention" than people with depression. Further, participants reported to be more likely "to employ" or "vote" for someone with an ED than for someone with depression, suggesting an unawareness of the level of impairment associated with EDs. Participants believed that others would be "more likely to imitate" someone with AN and that it "might not be so bad" to suffer from AN in comparison to BN and BED. The present results indicate that individuals suffering from EDs are viewed as being more responsible for and in control of their disorders than individuals with depression. This may suggest that the public underestimates the serious nature of EDs. The present results further indicate that BED is perceived as being more controllable than other EDs, which may put these individuals at even greater risk of stigmatization and should be addressed in efforts to prevent and reduce stigma.

Following the training, participants will be able to:

- Describe sources of stigma in eating disorders
- Identify ways to reduce and prevent stigma
- Discuss how stigma toward eating disorder may vary compared to other mental illnesses

Feelings of Power or Powerlessness Moderate the Relationship Between Body Shame and Eating Pathology in College Women

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This study explored whether feelings of power or powerlessness over societal and personal decisions moderate the relationship between 1) thin ideal internalization and eating pathology and 2) body shame and eating pathology. Depression was assessed by the Beck Depression Inventory (BDI), and level of risk for developing an eating disorder (ED) was assessed by the Weight Concerns Scale (WCS). We hypothesized that women with high levels of thin ideal internalization and body shame would have less eating pathology and comorbid problems if they felt more powerful. 153 college women ages 18-25 (55% Caucasian) reported on measures of ED pathology, anxiety, and depression as part of a larger RCT of an online intervention. Women were categorized into 4 ED risk categories: low risk for developing an ED (n=36), moderate risk (n=17), high risk (n=81), and current ED (n=19). PP did not differ significantly between risk groups. Correlations showed that women with more body shame felt significantly less powerful ($r=-.25$, $p<.01$), but thin ideal internalization was not significantly related to PP. Regression models found significant moderating effects of PP on the relationship between body shame and number of objective binge episodes in the past month, BDI, and WCS scores. The correlation between body shame and binge episodes was stronger for women who felt less powerful ($p<.001$). Similarly, body shame and BDI scores were more strongly correlated for women who felt less powerful ($p<.001$). Contrary to our hypothesis, PP moderated the body shame-WCS relationship ($p<.001$), such that feeling more powerful was associated with a stronger correlation. Overall, these results support the theory that feelings of PP may be an important factor in the pathways between body shame, eating pathology, and comorbidity. Future research should determine if PP might be protective against the development of EDs and comorbid problems, and further investigate the relationship between PP and ED risk.

Following the training, participants will be able to:

- Review the role of feelings of power or powerlessness as it relates to eating disorders.
- Demonstrate the moderating effects of feelings of power or powerlessness on the relationship between body shame and eating pathology, as well as between body shame and comorbidities of eating disorders.
- Discuss future directions for researching feelings of power or powerlessness and its role in prevention or treatment of eating disorders and comorbidities.

Population & Epidemiology – Room **Moderator: TJ Raney, PhD**

Eating Disorder Symptoms Patterns Over Time: Results at Five Years of a Longitudinal Study of Australian Community Women

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The study purpose was to investigate outcomes and their determinants over five years in two community samples of women with disordered eating. 122 young women (mean age 28.5 ± 6.3 years) identified in a general population based survey with eating disorder (ED) symptoms of clinical severity (baseline mean global EDE-Q score 3.7) agreed to participate in a 5-year follow-up study. A comparative sample of 706 (216 with disordered eating) similar aged self-selected College women was recruited one year later. Both ED groups were given a health literacy package in the first year. ED symptoms, health related quality of life, psychological distress, and help-seeking, were assessed annually with the EDE-Q, SF-12 and K-10, and other features (e.g. life events and substance use) were assessed on alternate years. 5-year response rates were 66% and 53% respectively. In both symptomatic groups there was early improvement in ED symptoms which plateaued after the first year and participants retained high EDE-Q scores (mean 3.1 global EDE-Q) at 5 years. BMI increased as expected. Mental health related quality of life and psychological distress scores fluctuated but did not change significantly (mean baseline K-10 and mental health component SF-12 scores at baseline and 5 years were 21.8 and 21.1 and 38 and 39.1 respectively in the community women). Outcomes were similarly poor in the College women. The findings suggest little likelihood of spontaneous remission of ED problems in community women. Determinants of health related quality of life went beyond ED features.

Following the training, participants will be able to:

- An understanding of outcomes of eating disorders in community samples.
- An appreciation of the complex determinants of outcomes with and without active treatments.
- Integration of knowledge regarding eating disorder specific and non-specific psychosocial determinants of outcomes in community samples.

Adolescent Disordered Eating Behaviours: Results Form a General Population Longitudinal Study

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Aims: To determine the prevalence of disordered eating behaviours in adolescence at age 14 and 16 in a large longitudinal general population cohort from the UK.

Methods: Our sample consisted of the Avon Longitudinal Study of Parents and Children (ALSPAC), a prospective, general population cohort in the UK. 10,661 adolescents were sent questionnaires at age 14 and 9,994 at age 16. Data on disordered eating behaviours and having received a diagnosis of an eating disorder (ED) or treatment for an ED were collected using the Channing-Harvard questionnaire (adapted from the Youth Risk Behavior Surveillance System questionnaire).

The prevalence of disordered eating behaviours in the cohort at age 14 and 16 were obtained; gender differences and age differences were compared using chi-square tests.

Results: At age 14 unhealthy weight control behaviours (UWCB) were reported by 35.5%, purging by 1.7%, fasting or skipping meals by 7.9%, exercising for weight loss by 35% of adolescents. By age 16 frequency of all UWCB apart from exercising for weight loss significantly increased (purging to 6.3%, fasting or skipping meals to 13.1%). Bingeing was present in 991 (6.9%) of 14 year-olds and 1247 (8.4%) of 16 year-olds.

At age 14, 33 (0.5%) adolescents reported having been told by a health professional that they had an ED and 101 (2%) ever having received treatment for an ED, at age 16, 35 (0.5%) reported having been told by a health professional that they had an ED and 92 (1.9%) ever having received treatment.

Conclusions: UWCB were common in 14-year-old adolescents, with a significant increase by age 16.

However very few adolescents at both ages had been diagnosed or treated for an ED. Girls were significantly more likely compared to boys to engage in UWCB and bingeing.

These findings add to previous findings on the prevalence of disordered eating in adolescence, albeit the prevalence of some behaviours (i.e. purging) seem lower in the UK compared to other countries such as the US.

Following the training, participants will be able to:

- Describe the prevalence of adolescent ED in a general population sample
- Be aware of the effects of age on adolescent disordered eating
- Describe gender differences in adolescent disordered eating

School Variation in Disordered Weight Control Behaviors in a Statewide Sample of Massachusetts Middle Schools

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Studies finding school-level variation in physical activity and obesity shows that school context has important effects on health in youth. Building on this research, we employed nonlinear mixed-effects models to examine school-level variation in disordered weight control behaviors (vomiting and/or use of laxatives and/or diet pills in the past month to control weight; DWCB). We used student self-report data

on sociodemographics, height, weight, and DWCB gathered in 47 Massachusetts middle schools in 2005 in addition to publicly available data on school characteristics. Models were gender stratified. The racially diverse sample included 9,498 girls and 8,893 boys. The highest and lowest quartiles of schools had a mean DWCB prevalence of 7.6% and 3.2%, respectively. In the intercept-only models accounting for school as a random effect, there was significant between-school variance in DWCB prevalence (Females: (su2Null=0.13, 95% CI 0.01, 0.25]; Males: (su2Null=0.20, 95% CI 0.19, 0.21). When individual-level characteristics (grade, race, weight status, and menarche [girls only]) were added to models, between-school variance in DWCB prevalence was reduced and remained significant only in males (Females: (su2Individual=0.07, 95% CI -0.02, 0.16; Males: (su2Individual=0.11, 95% CI 0.01, 0.22). In fully adjusted models, where school-level characteristics (% white, % overweight, % eligible for free/reduced-price lunch, % living in poverty in school census tract) were added, between-school variance was further reduced and became nonsignificant in males (Females: (su2Full=0.04, 95% CI -0.04, 0.11; Males: su2Full=0.06, 95% CI -0.03, 0.14). In sum, controlling for individual characteristics completely accounted for between-school variance in the female models; whereas in male models, some between-school variability remained, indicating that for males, school contextual factors appear to play a role in middle school males' DWCB.

Following the training, participants will be able to:

- Distinguish the goals and public health relevance of examining contextual-level factors versus individual-level factors related to risk of disordered weight control behaviors (DWCB) in adolescents.
- Describe the findings of the Healthy Choices Collaborative Study regarding the contribution of schools to variance in DWCB in middle school students.
- Discuss areas in need of more research to identify school contextual factors that may inform preventive intervention efforts.

Validation of Screening Tools and Prevalence of Night Eating among the Swedish Twin Registry

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We examined the prevalence of NE among in the STAGE cohort of the Swedish Twin Registry with two screening questions (N: M=10036; F=12700): 1) How often do you get up at night to eat? [nocturnal ingestions (NI) threshold \geq weekly]; and 2) How much of your intake do you eat after supper [evening hyperphagia (EH) threshold $>$ 25% of intake after supper]. In addition, we validated the screening items by interviewing $>$ 100 MZ and 100 same sex DZ twin pairs for whom at least one twin screened positive on one screening question using the Night Eating Syndrome History and Inventory to assess NI and a food recall from 2000-0500 h to assess EH. Percent of calories consumed at night for EH was estimated using the calories consumed between 2000-0500h and resting metabolic rate. Of the 470 (4.7%) M and 436 (3.4%) F who screened positive for NE, 184 (39.1%) M and 126 (28.9%) F endorsed NI only; 247 (52.6%) M and 278 (63.8%) F endorsed EH only; and 34 (7.2%) M and 18 (4.1%) F endorsed both items. Of those completing the validation interview (N = 416), 8 (4.5%) M and 9 (3.8%) F endorsed NI \geq 2/wk; 38 (21.2%) M and 82 (34.6%) F consumed $>$ 25% of intake between 2000-0500h, and 8 (4.5%) M and 17 (7.2%) F endorsed both. Of 79 M and 138 F with complete screening and interview data, 37 (46.8%) M and 26 (16.5%) F were correctly classified as non-night eaters; 15 (19.0%) M and 67 (42.4%) F were correctly classified as night eaters; 16 (20.2%) M and 38 (24.0%) F were misclassified as non-night eaters; 11 (13.9%) M and 27 (17.1%) F and were misclassified as night-eaters. Positive predictive values were 0.77 for men and 0.71 for women. Negative predictive values were 0.48 for men and 0.41 for women. In sum, the screening questions were acceptable; prevalence in this subsample was higher than previously reported in community samples.

Following the training, participants will be able to:

- Describe the prevalence of night eating among a large, community twin sample.
- Describe the relative prevalence of different features of night eating.
- Provide estimates of the validity of screening instruments for assessing night eating.

Sleep Problems are Associated with Binge Eating in Women

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Sleep problems are associated with a variety of health consequences, both physical and psychological. In experimental studies, insufficient sleep has been associated with changes in the neuroendocrine system, including increased levels of cortisol, decreased concentrations of the satiety hormone leptin, and increased levels of the appetite-stimulating hormone ghrelin. Insufficient sleep also promotes increased caloric and fat intake, supporting the hypothesis that a disturbed sleep cycle may not allow recovery of a hormonal profile facilitating appetite control. The goal of the current study is to investigate the relation between sleep problems and binge eating in women. Participants included 3874 women, with a mean (SD) age = 33.2 (7.7), from the STAGE cohort of the Swedish Twin Registry. Binge eating was defined as eating an unusually large amount of food in a short period of time with loss of control, with at least 4 episodes in a month. One-hundred eighty (4.6%) women were identified with a history of binge eating. A variety of sleep questions were asked assessing sleep problems and perceptions. We conducted a series of logistic regressions predicting binge eating from selected sleep items. Covariates in the analyses were age, history of depression, and cohabitation. Binge eating was significantly and independently associated with problems falling asleep ($p < .001$), disturbed sleep ($p < .001$), feeling sleepy during work or free time ($p < .011$), and how well you think you sleep ($p < .010$) even when controlling for relevant covariates. The observed association between binge eating and sleep disturbances adds to our increasing knowledge about the intricate relation between sleep and weight regulation. Next steps will include efforts to explore neuroendocrine factors that underlie this association.

Following the training, participants will be able to:

- Describe background literature relevant to the relation between sleep and binge eating
- Assess the relation between sleep and binge eating in a population-based sample of female twins from Sweden
- Discuss the role of age, depression, and cohabitation on the relation between binge eating and sleep in this sample

Eating and Weight Problems in a Community Cohort of Adolescents; Preliminary Results

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Eating and weight problems including disordered eating behaviors, eating disorders and obesity are prevalent among adolescents. Research addressing the full spectrum of weight-related problems is scarce. Our aim is to validate and classify the participants' eating and weight problems according to DSM-IV criteria as well as the proposed DSM-5-criteria for eating disorders in a community sample of adolescents. This study is part of TRAILS (TRacking Adolescents' Individual Lives' Survey), a prospective cohort study of the determinants and mechanisms of mental health and social development from preadolescence into adulthood. A representative community sample (2230 children, mean age at baseline 11 years) was obtained from community registers and schools. Recently, the cohort has finished the fourth study wave (N= 1584, response 71%, mean age 19 years). A group at high risk for eating and weight problems has been selected using data collected at the fourth study wave. Selection criteria were the proposed dimensions of an eating disorder according to DSM-5: Low (<18,5) or high (>30) BMI, binge eating, compensatory behaviors and distorted body image. The high-risk group will be asked to participate in an

interview by telephone, in which parts of the Structured Clinical Interview for DSM-IV (SCID) and the Eating Disorder Examination (EDE) will be administered. The high-risk group comprises 309 participants (19,5% of all 4th wave-participants). 93 participants (5,9%) are underweight and 91 (5,7%) are obese of which 16 report binge eating without compensatory behaviour. 100 participants (6,3%) report binge eating and compensatory behaviour, of which 8 are obese and 6 are underweight. We will present the results of the interviews conducted in the fall of 2010 on DSM-IV and preliminary DSM-5 diagnoses of eating and weight disorders in a high risk subgroup of a community sample of adolescents.

Following the training, participants will be able to:

- Describe the prevalence of eating and weight problems in a community sample of adolescents
- Describe the prevalence of eating disorders according to DSM-IV-criteria and the proposed DSM-5 criteria in a community sample of adolescents
- Describe the co-occurrence of multiple eating and weight problems in a community sample of adolescents

Risk Factors I – Room

Moderator: Carolyn Becker, PhD, FAED

An Internet-based Relapse Prevention Program for Anorexia Nervosa: A Large Controlled Study

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Anorexia nervosa (AN) has a very high relapse and mortality rate. Aim of this very new study was to reduce relapse in severe AN following discharge from inpatient treatment in a randomized controlled multicenter study (RCT) using an internet-based 9-month CBT relapse prevention program (RPP) as compared to treatment as usual (TAU). After additional 9-months a follow-up was conducted. Power analyses suggested an N of 250 patients. We randomized 258 AN-patients into one of the two conditions at the end of inpatient treatment. The hypothesis was tested that RPP would be more effective than TAU to maintain bodyweight. Expert interviews (SIAB-EX, PSR, SCID-I, Morgan Russell Scale) as well as self-ratings (SIAB-S, EDI-2, BSI, BIS-11) were used for measures over time. Currently all 258 patients have finished the intervention part of the study. Preliminary data analyses had shown relapse was lower in the internet-based RPP when compared to TAU. Until the ICED conference 2011 final data analyses will be done of all 258 patients having finished the intervention period. Very few adverse events (e.g. alarming weight loss) occurred during the trial. Acceptance of the relapse prevention program was high. Of the completers 94% largely or fully recommended the use of this internet program for AN. Compared to other intervention trials for AN the drop-out rate was low (25%). An internet-based relapse prevention program can successfully reduce the relapse rate in AN, but may have to be supplemented by some professional guidance to ensure compliance and success.

Following the training, participants will be able to:

- Anorexia nervosa (AN) has a very high relapse and mortality rate. Aim of our very new study was to reduce relapse in severe AN following discharge from inpatient treatment in a randomized controlled multicenter study (RCT).
- The hypothesis was tested that RPP would be more effective than Treatment As Usual (TAU) to maintain body weight. Using an internet-based 9-month CBT relapse prevention program (RPP) preliminary data analyses had shown relapse was lower in the internet-based RPP when compared to TAU.
- An internet-based relapse prevention program can successfully reduce the relapse rate in AN, but may have to be supplemented by some professional guidance to ensure compliance and success.

Investigation of Quality of the Family Environment as a Moderator of Genetic and Environmental Risk for Disordered Eating in Adolescent Females

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Purpose. While a better understanding of gene-environment interactions (GxE) could allow a better understanding of the nature of individual differences in vulnerability or resistance to complex psychopathology, only one previous study has directly tested this in the area of disordered eating. The purpose of the current study is to directly test the moderating effect of adverse family environment on latent genetic and environmental risk factors for disordered eating in young adolescent female twins. **Methods.** The first wave of a longitudinal study of female adolescent twin cohort and their parents was examined using interviews with the twins and self-report questionnaires with the parents. Female-female twins aged between 12.70 years to 16.28 years with a mean age of 13.96 years (SD=0.80) participated in the current study, representing 351 families, where interviews were completed with 699 children. The global score from the Eating Disorder Examination was utilised as the measure of disordered eating, and family environment was assessed using a composite of five sub-scales from standardised questionnaires which assessed parental criticism, parental expectations, parental conflict and parental care (assessed separately for mother and father). **Results.** Model fitting showed a linear moderation of genetic and environmental influences on disordered eating across varying degrees of an adverse family environment. Between the minimum and maximum estimates of adverse family environment, genetic variance of disordered eating increased from 15.66% to 16.84%, non-shared environment increased from 38.76% to 61.33%, and the shared environment decreased from 45.57% to 21.84%. As perceptions of adverse family environment increase, so too does the impact of non-shared environment, implicating family environment as an effective event, one that can be experienced uniquely by each family member, influenced to some degree by the temperament of the child.

Following the training, participants will be able to:

- Assess the impact on perceived adverse environment on young female adolescents' latent and genetic and environmental risk for disordered eating.
- Describe the methods used to investigate moderation of genetic and environmental risk for disordered eating.
- Summarize the literature pertaining to family environment as a risk factor for disordered eating.

Perfectionism as a Risk Factor for Body Dissatisfaction and Bulimic Symptoms: The Intervening Role of Perceived Pressure to be Thin and Thin Ideal internalization

Liesbet Boone, Master in psychology, Ghent University, Ghent; Bart Soenens, Prof, Ghent University, Ghent; Caroline Braet, Prof, Ghent University, Ghent

Mounting evidence suggests that perfectionism contributes to the development and maintenance of eating disorder (ED) symptoms. Research adopting a multidimensional conceptualization of perfectionism has shown evaluative concerns (EC) perfectionism to be more strongly associated with ED pathology compared to personal standards (PS) perfectionism. However, few studies examined these relations prospectively and few studies examined the underlying mechanisms accounting for these relations. Accordingly, based on the sociocultural theory, the aim of this longitudinal study is to examine pressure to be thin and thin ideal internalization as mechanisms through which PS and EC perfectionism could lead to the development of bulimic symptoms. A total of 559 adolescents (M age = 14.7 years at T1) completed questionnaires tapping into perfectionism at T1, eating disorder symptoms (body dissatisfaction and bulimia at T1 and T3), pressure to be thin at T2, and thin-ideal internalization at T2. Structural equation modeling (SEM) was used to examine the hypotheses. Findings showed that EC perfectionism and PS perfectionism were differentially related to the mediators examined in this study, with EC perfectionism being primarily related to pressure to be thin and with PS perfectionism being primarily related to thin ideal internalization. Further, whereas EC perfectionism was related to increased bulimic symptoms both directly and indirectly, PS perfectionism was only indirectly related to an increase in bulimic symptoms through the sociocultural mediators. These results confirm previous accounts of EC perfectionism as a risk factor for eating pathology but also suggest that PS perfectionism, which sometimes has been portrayed as

an adaptive feature of perfectionism, may be an indirect risk factor for ED symptoms. Prevention and intervention programs should address the role of pressure and internalization, especially for those adolescents who are vulnerable in terms of high EC and PS perfectionism.

Following the training, participants will be able to:

- Describe the importance of a multidimensional conceptualization of perfectionism
- Examine the differential relationship of personal standards perfectionism and evaluative concerns perfectionism to eating disorder symptoms.
- Examine mediators for the relation between multidimensional perfectionism and eating disorder symptoms: adopting a sociocultural perspective

Cognitive Dissonance Eating Disorders Prevention: A Randomized Controlled Trial of the Training Approach used by Reflections: Body Image Academy

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In 2008, the North American-based Tri Delta sorority launched Body Image Academy (BIA), a centralized training program designed to facilitate dissemination of Reflections: Body Image Program, a peer-led cognitive dissonance-based (CD) eating disorder (ED) prevention program. The goal of the present work-in-progress, three-cohort, four-year randomized controlled trial is to test the dissemination training approach used by BIA. The primary experimental manipulation involved the training of peer-leaders who delivered CD. Peer-leaders underwent 9 hours of training overseen either by both a doctoral psychologist and undergraduate research assistants (CD-D) or by the same research assistants in the absence of the psychologist (CD-U). Participants (N=188 enrolled to date), which include two cohorts of new members to seven local sororities at a small university, were randomized into CD-D (n=97) or CD-U (n=91). The Positive and Negative Affect Scale, Ideal Body Stereotype Scale-Revised, Satisfaction with Body Parts Scale, Objectified Body Consciousness Scale, and items from the EDE-Q were administered at pre- and post-treatment, 6-weeks, 8-months, and 14-months. Mixed model ANOVA through post-intervention in the entire sample indicated that both groups showed significant improvement in negative affect, thin-ideal internalization, body satisfaction, body surveillance, and ED pathology at 6-weeks for both cohorts through 14-months for cohort one. There were no time by group interactions, indicating no significant differences between groups CD-D and CD-U. Findings thus far support the viability of using highly trained undergraduate peers training other peer-leaders, although ongoing data collection will increase statistical power and the chance of finding potential group differences.

Following the training, participants will be able to:

- Describe the general model of Reflections: Body Image Academy
- Explain the rationale for testing whether undergraduates can train peer leaders in the Reflections Program
- Describe the results of this dissemination study.

The Impact of Adverse Life Events and The Serotonin Transporter Gene Promoter Polymorphism on the Development of Binge Eating

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Adverse life events have been shown to predict weight fluctuations and dietary restraint, as well as eating disorders during adolescence or early adulthood. Since the s-allele carriers of the 5-HTT gene-linked polymorphic region (5-HTTLPR) are biologically more reactive to stress related stimuli, we aimed to

explore whether the eating disturbances are related to sensitivity to environmental stressors moderated by the 5-HTTLPR. The sample was based on younger cohort participating in the second and third wave of the Estonian Children Personality, Behaviour and Health Study. The history of stressful life events was self-reported at age 15. Data on eating behaviour and attitudes, anxiety, and depressiveness were collected at age 18.

It was found that the effect of the adverse life events on binge eating was moderated by the 5-HTTLPR. Adolescent girls carrying the s-allele who at age 15 had reported history of frequent adverse life events showed elevated scores in EDI-2 bulimia subscale at age 18. The effect of the s-allele on binge eating was even more pronounced when solely the experience of sexual abuse was considered. These data give further support to the idea that adverse life events in childhood may heighten susceptibility to serotonergic dysregulation following stress, and suggest that in individuals vulnerable to eating disorders this may result in increased binge eating.

Following the training, participants will be able to:

- Assess the role of trauma and adverse life events on developing symptoms of eating disorders.
- Explore the role of interaction of serotonin-related biomarker and adverse life events on eating disorder symptoms.
- Assess possible mechanisms explaining stress vulnerability in eating disorders patients.

Lifestyle Choices in Childhood and Adulthood: A Multicentre European Study in Eating Disordered Patients and Healthy Controls

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Lifestyle choices, are often adopted in childhood, tend to persist throughout life and have been related to the development of a subsequent eating disorder (ED). The present study therefore examined whether different childhood and adulthood lifestyle choices are related to an ED. A total of 1609 participants took part in the study. The ED cases (n 859) were referred for assessment and treatment to specialized ED units in five different European countries and were compared to a control group of healthy individuals (n 770). Participants completed the questions related to work, school, socialising and sedentary and exercise behaviours of the Cross-Cultural Questionnaire (CCQ). In the control group, also the GHQ-28, the SCID-I, and the EAT-26 were used. Logistic and multinomial regression analyses adjusted by sex, age, BMI and education indicated that doing homework at school before the age of 12 ($p < 0.001$) and currently working ($p < 0.05$) and exercising ($p < 0.05$) were positively related to an ED. Conversely the following adulthood behaviours were negatively linked to an ED: working/studying at home ($p < 0.001$), watching videos ($p < 0.001$), socialising ($p < 0.001$) and playing sport ($p < 0.05$). Significant differences across ED subdiagnoses also emerged. The general pattern was that compared to BN, AN and EDNOS patients exhibited higher values on the following childhood behaviours: doing homework at school ($p < 0.05$) and playing computer games ($p < 0.001$) and the current adulthood behaviours: exercising ($p < 0.05$), working and/or studying at home ($p < 0.001$) and using the Internet ($p < 0.001$). Finally, cross-cultural differences also emerged. Our results suggest that lifestyle choices are different for ED patients and controls. AN and EDNOS seem to choose more solitary behaviours than BN. It is essential to gain insight about lifestyle choices at an early age in order to promote healthy lifestyles and prevent EDs.

Following the training, participants will be able to:

- To assess whether there are differences in lifestyle choices between eating disorder patients and healthy controls.
- To evaluate whether childhood and adulthood lifestyle choices are related to current, minimum and maximum BMI.
- To examine whether there are differences in childhood and adulthood lifestyle choices across different eating disorder subtypes.
- To assess whether there are cross-cultural differences in the objectives described above.

Treatment Outcome I – Room

Moderator: Marion Olmstead, PhD, FAED

Randomized Placebo-Controlled Trial of Orlistat with Behavioral Weight Loss Therapy in Obese Patients with and without Binge Eating Disorder: An Effectiveness Study in Hispanic Patients with Serious Mental Illness

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Persons with serious mental illness are at heightened risk for obesity and medical comorbidities. Hispanic persons are under-represented in research despite high rates of obesity. Binge eating disorder (BED) is associated with increased psychopathology but its prognostic significance in obesity treatment is uncertain. This randomized placebo-controlled trial tested orlistat plus behavioral weight loss (BWL) in Hispanic patients with serious mental illness, designed to test moderating effects of BED. The study was performed at a community-mental-health-center for Spanish-speaking-only patients with serious mental illness (major mood disorders and/or substance use disorders and impaired global functioning).

Seventy-nine obese patients with BED (N=40) or No-BED (N=39) were randomly assigned to either orlistat+BWL or placebo+BWL for 4 months. Double-blind medication was either orlistat (120mg tid) or placebo. BWL was culturally-enhanced modification of Diabetes-Prevention-Program delivered in Spanish. Assessments included Spanish-language versions of SCID-I/P and EDE interview. Assessments were done post-treatment and 6 months after treatments.

Overall, mean weight loss was 2.5% at post-treatment and 2.1% at 6-month follow-up, mean improvements in EDE scales were 41%, and mean reduction in BDI was 40%. Adding orlistat to BWL was not associated with significantly greater improvements in outcomes than placebo+BWL. BED did not significantly moderate outcomes, with the exception of weight loss. Among No-BED patients, adding orlistat was associated with greater weight loss than placebo (4.2% vs 0.9%). Among BED patients, remission rates from binge-eating were 65% at post-treatment and 50% at 6-month follow-up.

In sum, culturally-adapted BWL delivered to obese Hispanic patients with serious mental illness resulted in modest weight loss, reduced ED psychopathology, and reduced depression. The addition of orlistat was not associated with superior outcomes relative to placebo, although it enhanced weight losses in obese patients without BED.

Following the training, participants will be able to:

- Describe the significance of binge eating disorder in obese persons in hispanic persons with serious mental illness.
- Assess the effectiveness of behavioral weight loss therapy for obesity and associated eating disorder psychopathology in obese persons with versus without binge eating disorder.
- Assess the effectiveness of adding orlistat medication to behavioral weight loss therapy for obesity and associated eating disorder psychopathology.

Combined Nutritional, Psychological and Pharmacological Treatment of Binge-Eating Disorder

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Aim: Binge-eating Disorder (BED) has been treated with nutritional therapies, psychotherapies or pharmacotherapies with disappointing results in terms full long-lasting remission and relapses. The

disorder is a combination of psychophysical pathologies and therefore a successful treatment must consider all types of alterations simultaneously. In this line, we have administered to a group of 30 BED patients a nutritional therapy, cognitive-behavioral therapy (CBT), sertraline and topiramate to see whether or not more significant results could be obtained. Methods: In a double-blind controlled design we treated for 6 ms. 10 BED patients with nutritional+CBT+sertraline+topiramate therapies (group 1), 10 with nutritional+ CBT+sertraline therapies (group 2), 10 with nutritional+CBT therapies (group 3). Binge episodes and BMI were monitored every month, psychopathological aspects were examined by the EDI-2, SCL-90 and the PDQ-4 scales before and after 6 months of treatment. Results: BMI and binge episodes were significantly reduced only in group 1, together with significant improvements of EDI-2 total values and the subitems "bulimia", "drive for thinness", "maturity fear", of SCL-90 total values and the subitems "somatization", of PDQ-4 subitem "dependent personality". No significant results were observed in the other 2 groups. Conclusions: The combined treatment with nutritional rules, CBT, sertraline and topiramate offer the best results in terms of short and long-term efficacy and of improvement of both physical and psychological pathologies of BED

Following the training, participants will be able to:

- Assess the best type of treatment for BED
- Assess the effects of a combined treatment, nutritional, pharmacological and psychological on the physical aspects of BED
- Assess the psychological effects of a combined nutritional, pharmacological and psychological therapy in BED

Efficacy and Intensity of Day Hospital Treatment for Eating Disorders

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Day hospital (DH) treatment has a recognized place in the continuum of care for eating disorders. However, treatment intensity and duration appear to be based primarily on availability of resources and clinical judgement rather than scientific evidence. The purpose of the current study was to compare the effectiveness of 4-day versus 5-day DH treatment and to provide effectiveness data for DH treatment based on a large sample size. Participants were 775 patients who were diagnosed with an eating disorder and participated in DH treatment from 1985 to 2009. The study followed a sequential cohort ABA design with DH treatment running 5 days weekly in the first cohort, 4 days weekly in the second cohort and 5 days weekly in the third cohort. Higher intensity DH was associated with higher rates of abstinence from bingeing and vomiting and larger improvements in depression and body dissatisfaction. Higher intensity DH seemed to provide no consistent advantage in rates of weight restoration or improvement on other indices of attitudes and psychological functioning. The improvements associated with DH treatment in the current study were large and compare favourably with those noted in other centres.

Following the training, participants will be able to:

- Describe the effectiveness of day hospital treatment
- Compare the effectiveness of 4 day and 5 day Day Hospital Programs
- Summarize differences in cost effectiveness related to intensity of treatment

N-acetylcysteine in Treatment of Bulimia Nervosa: A Single- Center, Open label, Flexible-Dose Study in Outpatients

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Objective: Bulimia nervosa (BN) is associated with impulsivity and mood disorders. N-acetylcysteine (NAC), an amino acid reducing synaptic release of glutamate, was superior to placebo in reducing impulsive compulsive behaviors in pathological gambling and trichotillomania. Some preliminary

observations also suggest that NAC may have thymoleptic properties. The purpose of this study was to evaluate the efficacy and safety of NAC in the treatment of BN.

Methods: Up to 15 outpatients with BN will be enrolled in this 12-week, open-label, flexible-dose, single-center study.

Results: The last participant is projected to be enrolled in March, 2011. Upon completion of data analysis, this abstract can be updated. The primary outcome measure will be the weekly frequency of binge-purge episodes (defined using DSM-IV-TR criteria, and assessed via clinical interview and review of subject take-home diaries at each study visit). Secondary outcome measures will include weekly frequency of binge-purge days (days when there were one or more binge-purge episodes); body mass index; Clinical Global Impression-severity scores; Eating Inventory scores, The Yale-Brown-Cornell Eating Disorder Scale total and subscales scores, Eating Disorders Examination – Questionnaire total and four subscale scores, and Hamilton Depression Rating Scale total scores. Other secondary efficacy measures will be response categories based on percentage decrease in frequency of binges-purges from baseline to endpoint and defined as follows: remission=cessation of binge-purge episodes; marked=75-99% decrease; moderate=50-74% decrease; and none=less than 50% decrease.

Following the training, participants will be able to:

- Understand the scientific rationale behind testing N-acetylcysteine in the treatment of bulimia nervosa.
- Describe general pharmacological properties of N-acetylcysteine

Pilot Study of Chromium Picolinate in Adults with Binge Eating Disorder: Preliminary Findings

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The purpose of this study was to evaluate the effect of chromium picolinate (CrPic) on eating behavior (Binge Eating Scale [BES] and Eating Disorder Examination-Questionnaire [EDE-Q]), depressed mood (Quick Inventory of Depressive Symptoms [QIDS-SR]), cravings (Food Craving Inventory [FCI]), and body weight in overweight and obese adults who met DSM-IV criteria for binge eating disorder (BED). After a 1-month placebo run-in phase, 11 participants (9 women, 2 men) ages 18 to 53 years (mean \pm SD = 37.5 \pm 13.2) were randomized in double-blind fashion to 6 months treatment with either 1000 mcg/day CrPic (high dose: n=3), 600 mcg/day (moderate dose: n=4) or placebo (n=4). Changes from study entry to end-of-treatment for the placebo-treated, high- and low-dose CrPic groups were as follows, respectively: total BES score (-10.3%, -28.2%, -56.2%), global EDE-Q score (-4.8%, -23.6%, -36.3%), QIDS-SR (-6.7%, -45.2%, -16.7%), FCI sweet subscale (+1.4%, -27.5%, -37.7%), and weight (+4.9%, -2.1%, -1.9%). CrPic has been shown to reduce negative mood and cravings in patients with atypical depression, and to improve blood glucose levels in persons with type 2 diabetes. These preliminary results suggest that CrPic may help reduce binge eating and related concerns, depressed mood, cravings for sweet foods, and body weight in overweight/obese individuals with BED. Future plans are to extend these pilot findings with a larger sample and explore CrPic as an adjunct to cognitive behavioral therapy and to antidepressant pharmacotherapy.

Following the training, participants will be able to:

- Describe biological and behavioral effects of CrPic, including effects on weight, mood, and appetite.
- State differences in study outcomes in placebo-treated compared to CrPic-treated groups
- State goals for future studies related to CrPic treatment in BED.

Effects of a Collaborative Weight-Gain Protocol on Weight Restoration in the Context of a Multimodal Partial Hospitalization Program

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OBJECTIVE: Working with underweight clients towards sustained weight restoration requires special attention to clients ambivalent motivations about gaining weight. The aim of the current study was to determine the effect of the introduction of a collaborative weight-gain protocol in the context of a partial hospitalization program (PHP) for Eating Disorders. **METHOD:** The weight-gain protocol was introduced in September 2009 and integrated into a multi-modal CBT-based PHP. Application of the protocol is collaborative: therapists and clients regularly discuss and negotiate details of the protocol procedures prior to and during the program. Clients who participate in the PHP agree to a weekly weight gain of at least 0.5 kg when their BMI is lower than 20 kg/m² and they are aware they will be asked to stop attending the program (but will be offered further follow-up) if they do not gain 0.5 kg per week on three different weeks. So far, thirty-five participants have completed the PHP since the protocol has been introduced and their results are being compared with those of 153 women who participated in the PHP prior to the introduction of the protocol (i.e., from January 2006 to August 2009 wherein weight gain was encouraged but there was no formal protocol.) **RESULTS:** Patients attending the PHP since the introduction of protocol have gained significantly more weight than those who attended prior to the protocol (1.97 + 0.27 vs 0.78 + 0.13 kg/m² p<.0001), while no cohort differences in pre-treatment BMI (mean 16.9 + 1.9 kg/m²), in time spent in the program (mean 12.0 + 4.2 weeks) or in co-morbid psychopathology have yet been detected. **DISCUSSION:** This quasi-experimental study demonstrates the positive in-treatment effects on weight restoration of a collaborative protocol with clear non-negotiable consequences. Further study is planned to determine whether the increased weight gains are sustained in the weeks and months following program completion.

Following the training, participants will be able to:

- Develop knowledge about implementing treatment non-negotiables related to weight gain.
- Develop knowledge about the effectiveness of the collaborative weight-gain protocol
- Understand the limitations in developing and implementing the collaborative approach