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DIFFERENCES IN MEDICAL OUTCOMES AND TRIGGERS FOR DISEASE BASED ON PRE-MORBID WEIGHT STATUS IN ADOLESCENTS WITH ANOREXIA NERVOSA

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Purpose: Youth with obesity who experience unsafe weight loss represent an under-diagnosed population in the eating disorder (ED) field. However, differences in medical outcomes and triggers for disease between those whose pre-morbid weights were classified as "overweight/obese" vs. "normal" are poorly understood, interfering with optimizing prevention and treatment. We aimed to examine the differences in medical complications and reported triggers for ED onset based on pre-morbid weight in adolescents with anorexia nervosa (AN).

Methods: We performed a retrospective, electronic chart review of patients aged 9-19 admitted for complications of malnutrition due to AN or atypical AN (AAN) at a large, urban pediatric hospital from January 2015 to February 2020. Comparison groups were divided by their pre-morbid growth trajectories: "normal" [<85 th percentile body mass index (BMI)] vs. "overweight/obese" (≥ 85 th percentile). Demographic and outcome data (e.g., weight, vital signs, triggers for ED behaviors) were obtained. Reported triggers for disease were acquired, coded, and categorized into main themes via qualitative thematic analysis and then treated as binary variables. Binary logistic and linear regression analyses were conducted.

Results: 150 patients were identified. Mean (SD) age was 14.1 (2.3) years. 86% were female, 80% white, and 92% non-Hispanic/Latinx. 23% had pre-morbid weight in the overweight/obese category. We found no difference in age or length of stay between those with overweight/obesity vs. not. However, those with overweight/obesity had lost a significantly higher mean percentage of total body weight (%TBW) (22.3% vs. 17.9% [$p=0.04$]) and at a higher rate (11.4 vs. 5.7 pounds/month [$p=0.18$]) compared to those without overweight/obesity. Previous weight status was not a significant predictor for the presence of bradycardia, hypotension, or orthostasis. However, higher %TBW lost was significantly associated with the presence of bradycardia, when controlling for previous weight status and rate of weight loss ($p<0.001$). Furthermore, those with pre-morbid overweight/obesity had 7.6x the odds of reporting positive reinforcement about weight loss as a trigger for their ED ($p=0.004$) and 3.9x the odds of reporting weight-related teasing ($p=0.003$) compared to those without pre-morbid overweight/obesity when controlling for age and length of symptoms.

Conclusions: Patients with AN/AAN who had pre-morbid overweight/obesity have significantly higher %TBW lost and rates of weight loss than those who were normal-weighted, which can place them at risk of dangerous complications, such as bradycardia. These patients are also more likely to report weight-related teasing and positive reinforcement for weight loss as triggers for disease. Understanding these data can help optimize prevention, assessment, and treatment of EDs in this under-diagnosed population.

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RESEARCH POSTER SYMPOSIA III: PREDICTORS OF ADOLESCENT HEALTH-RELATED BEHAVIORS AND OUTCOMES

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SEX DIFFERENCES IN NUTRITIONAL REFEEDING TREATMENT AMONG ADOLESCENTS AND YOUNG ADULTS HOSPITALIZED FOR EATING DISORDERS

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Purpose: Eating disorders in male populations are underrecognized and undertreated, leading to delays in identification, diagnosis, and treatment. Although male adolescents and young adults generally have greater energy requirements than females due to greater body weights, metabolic response, and exercise, current inpatient nutritional refeeding protocols support a single caloric prescription regardless of sex. The objective of this study was to determine sex differences in nutritional refeeding outcomes among adolescents and young adults hospitalized for eating disorders.

Methods: We retrospectively reviewed electronic medical records of 601 patients aged 9-25 years admitted to a tertiary care center for medical and nutritional management, between May 2012 and August 2020. We collected demographic, clinical, and nutritional characteristics (including initial caloric prescription, discharge kilocalories [kcal], weight change, and length of stay) from the electronic medical record. Descriptive statistics, unadjusted, and adjusted linear regression models were used to assess the association between sex and nutritional outcomes, as well as length of stay.

Results: A total of 588 adolescents and young adults met eligibility criteria, [16% male, mean (SD) age 15.96 \pm 2.75, 71.6% anorexia nervosa, admission percent median body mass index (%mBMI) 87.1 \pm 14.1]. In unadjusted comparisons, there were no significant sex differences in prescribed kilocalories (kcal) per day at admission (2013 vs. 1980 kcal, $P=0.188$); however, males had higher Estimated Energy Requirements (EER) (3694 vs. 2925 kcal, $P<0.001$). In linear regression models adjusting for potential confounders including age, race/ethnicity, and diagnosis, male sex was associated with higher prescribed kcals at discharge ($B=855$ kcal, $p<0.001$), greater weight change ($B=0.50$ kg, $p=0.016$), and longer length of stay ($B=1.83$ days, $p=0.001$) than females. Older age, lower admission weight, lower prescribed kcal at admission, higher EER, and lower heart rate at admission were factors associated with longer length of stay in linear regression models. In these adjusted models, every 1000 lower kcal prescribed at admission was associated with a 3.99 day longer length of stay while every 1000 greater kcal in the EER was associated with a 1.61 day longer length of stay.

Conclusions: We report for the first time that males hospitalized for eating disorders require higher kcal/day at discharge than females despite clinical protocols that standardize the beginning kcal/day regardless of sex. This may lead to longer hospitalizations for male adolescents and young adults with eating disorders. These findings suggest that current refeeding approaches may be insufficient for male patients and support the development of individualized treatment protocols for males with eating disorders. Given the rise in hospitalizations for eating disorders during the COVID-19 pandemic,