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

Jessica A. Lin, MD¹, Grace Y. Jhe, PhD², Julia Vitagliano², Richa Adhikari, MD, MPH³, Kelsey Rose, RD, MPH², Melissa Freizinger, PhD², Tracy Richmond, MD, MPH²

¹Cincinnati Children's Hospital Medical Center; ²Boston Children's Hospital; ³California State University.

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

35.

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

Jason M. Nagata, MD, MSc¹, Paola Bojorquez-Ramirez², Anthony Nguyen¹, Kyle T. Ganson³, Vanessa I. Machen¹, Sara M. Buckelew¹, Andrea K. Garber¹

¹University of California, San Francisco; ²Yale University; ³University of Toronto.

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,

these findings can improve quality of care and healthcare efficiency among an underserved population in a post-pandemic world.

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PLATFORM RESEARCH PRESENTATION IV: FUTURE OPPORTUNITIES

36.

PREDICTORS OF DIVERSION FROM THE CRIMINAL JUSTICE SYSTEM AMONG FIRST TIME JUVENILE OFFENDERS

Annalee Johnson-Kwochka, MS¹, Casey Pederson, PhD²,
Katherine Schwartz, JD, MPA², Patrick Monahan, PhD²,
Matthew Aalsma, PhD²

¹Indiana University-Purdue University Indianapolis; ²Indiana University School of Medicine.

Purpose: First-time juvenile offenders are increasingly diverted from the justice system post-arrest. Although widely researched, programs frequently differ in how they define diversion, with two broad categories of program emerging in the literature: formal and informal diversion programs, which differ in the level of monitoring youth receive post-arrest. Reports on diversion programs frequently emphasize their relationships to recidivism, however, few describe differences between diverted and non-diverted youth. In this investigation, we 1) describe the characteristics of youth diverted after first arrest from a large, urban juvenile justice system over an 11-year span, and 2) describe demographic and criminal charge predictors of formal and informal diversion in this sample.

Methods: This was a secondary analysis of data on 22,065 Medicaid-enrolled youth arrested for the first time in one urban Indiana county between 2005 and 2016. Youth's diversion status was identified according to their case status; decisions were made in collaboration with county juvenile justice officials and in consultation with literature on other diversion programs. To examine predictors of diversion, we performed a multinomial logistic regression with age at first arrest, gender, racial identity, and charge type as predictors of entry into informal or formal diversion programs, or court-processing. Two-way interactions between predictor variables were all entered into the model and were removed using backward deletion until only statistically significant interactions were included, with $\alpha < .01$ to account for multiple interaction tests.

Results: Among 22,065 youth, 7,749 (35.1%) were informally diverted and 4,041 (18.3%) entered formal diversion programs, while 10,275 (46.6%) were processed in court. Youth who were younger at first arrest ($B = -.21, P < .00$) white youth (compared to black youth or youth of color; $B = .71, P = .01$), and youth arrested under drug ($B = 3.1, P < .00$) or status offenses ($B = -2.7, P < .00$) (compared with violent or property offenses) were most likely to be formally diverted. Meanwhile, younger youth ($B = .18, P < .00$) and female youth (compared to male youth; $B = .16, P = .01$) were most likely to be informally diverted. Interactions between predictors of diversion were also significant. Most significantly, female youth arrested for violent or property offenses were more likely to be diverted (either formally; $B = .81, P < .00$) or informally; $B = .10, P < .00$) compared to male youth arrested for similar offenses. Black youth and youth of color who were arrested for violent offenses were also less likely to be informally diverted ($B = -.49, P < .00$) compared to white youth arrested for similar offenses.

Conclusions: Existing research suggests that formal diversion programs lead to improved behavioral health outcomes and reduce future delinquency. Meanwhile, informal diversion programs can limit deeper involvement in the criminal justice system. Given these outcomes, it is important to better understand differences in which youth get diverted, either informally or formally, and which youth are more likely to be adjudicated in court. Individual jurisdictions may differ in their guidelines on when to divert youth or may allow for significant individual decisions for police or probation officers; investigations like these may highlight problematic demographic patterns in youth diversion, allowing jurisdictions to identify and set clearer policies.

Sources of Support: No sources of financial support.

37.

OPPORTUNITIES FOR PREVENTING IMPAIRED DRIVING AND RIDING WITH AND IMPAIRED DRIVER: A QUALITATIVE STUDY OF YOUTH EXPERIENCES DURING AND AFTER HIGH SCHOOL

Deepa R. Camenga, MD, MHS¹, Kaigang Li, PhD², Ronald J. Iannotti, PhD³, Barbara C. Banz, PhD¹, Candice A. Grayton, MPH³,
Vanessa Zuniga, MA¹, Denise L. Haynie, PhD³, Bruce G. Simons-Morton, PhD⁴, Leslie Curry, PhD, MPH¹, Federico E. Vaca, MD¹

¹Yale School of Medicine; ²Colorado School of Public Health; ³The CDM Group, Inc; ⁴National Institute of Child Health and Development, NIH; ⁵National Institute of Child Health and Development, NIH (Retired); ⁵Yale School of Public Health.

Purpose: Despite greatly reduced roadway travel during the COVID-19 shelter-in-place orders, alcohol and drug use among seriously and fatally injured roadway users in the U.S. increased in 2020. Motor vehicle crashes are the leading cause of death for U.S. youth. As travel resumes to pre-pandemic levels, it remains essential to identify novel strategies to prevent driving while impaired (DWI) and riding with an impaired driver (RWI). This qualitative study explored how youth avoid DWI and RWI during and after high school to inform prevention efforts.

Methods: In 2020, virtual in-depth individual interviews were conducted with a geographically diverse sample of 105 young adults. Participants were purposively sampled from the NEXT Generation Health Study, a nationally representative longitudinal cohort study, and had varying levels of experience with DWI/RWI during and after high school (mean age 26.36 ± 0.52 y/o, 47.7% ♀). A semi-structured interview guide explored pre-pandemic experiences with DWI/RWI. Using directed content analysis approaches, guided by ecodesvelopment theory, a six-member multidisciplinary team systematically applied inductive and deductive codes to each transcript; agreement was achieved by team consensus. Themes were derived using data immersion (with coded data and transcripts), investigator reflexivity and team dialogue. We present themes derived from the codes "Chose not to DWI", "Chose not to RWI", and "Missed Opportunities for Prevention".

Results: Participants avoided DWI by trusting their self-assessment of impairment, defined as poor physical ability to drive, "I knew I could barely stand up and coherently walk through the sand ... [it's] probably not the best idea for me to get behind the wheel." Some relied on trusted, close friends to intervene: "My perspective is like 'I'm good to drive but I'm swirling'. [My friends] will make those decisions for me to prevent what could happen". Perceived police presence on the roadways also prevented potential DWI, "You always consider that there's gonna be more cops on the road or not".