that were born between 34–37 weeks of gestation. Infant will be divided with regard to their exposure to NICU experience. RESULTS/ANTICIPATED RESULTS: We anticipate identifying neurodevelopment delays among children born prematurely between 34 to 37 weeks of gestation. We anticipate that our controlled group will have better outcomes when compared to the controlled expose group. We also expect that gestational age impacts adversely neurodevelopment in children who were born between 34 and 37 weeks of gestation. DISCUSSION/SIGNIFICANCE OF IMPACT: Approximately 84% preterm birth are considered LPIs. Prematurity is described as a chronic condition; adverse long-term neurodevelopment consequences. Our study promotes early detection and interventions that can reduce the consequences of the neurodevelopment delays in LPIs.

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Assessing the inclusion of women and minority populations in ClinicalTrials.gov results in studies focused on type 2 diabetes and GLP1 drugs

Jesse Reynolds[1,2], Christina Barone[2] and Lisa Calvocoressi[3]
[1]Yale University; [2]Yale School of Medicine and [3]Yale School of Public Health

OBJECTIVES/GOALS: This study aims to evaluate diversity of participants in GLP-1 T2DKM clinical research with regard to sex, race, and ethnicity by using results data available through the ClinicalTrials.gov database. Sample population estimates for studies were calculated using the 2020 Census and compared within groups with respect to sex, race, and ethnicity. METHODS/STUDY POPULATION: The public ClinicalTrials.gov database was searched for interventional studies with GLP1 inclusion as treatment (n = 2,397). This search was then filtered to studies where results were reported (n = 772). From these studies, 466 studies focused on type 2 diabetes as a condition and thus became the analysis dataset. Participant and protocol information for these 466 studies were obtained from the clinical trials transformation initiative (CTTI) as an AACT data download. Observed to expected ratios were calculated for each subgroup-based population estimates from the 2020 Census and using the baseline counts of participants for studies where sex, race, and ethnicity were provided. In addition to within group comparisons, study characteristics (e.g. phase) were included in models to assess influence of covariates. RESULTS/ANTICIPATED RESULTS: Of the 466 studies, 430 (92%) reported sex, 171 (37%) reported race, and 145 (31%) reported Hispanic ethnicity. Among those found to be underrepresented in studies (defined as a ratio < 1): females (mean = 0.89, median = 0.92); Black/African Americans (mean = 0.88, median = 0.39). Hispanic or Latinos mean ratio was 1.16 (95% CL: 0.97, 1.35) but had the least available data. When including covariates in the models, there were statistically significant differences in ratios with respect to sex as females had significantly lower odds compared to males (ratio > = 1), with the odds being about 21% of those for males. With respect to race, Black or African American individuals had significantly lower odds (about 32% of those of White individuals) (ratio > = 1). DISCUSSION/SIGNIFICANCE OF IMPACT: This study reveals significant underrepresentation of females (mean ratio 0.89) and Black/African Americans (mean ratio 0.88) in clinical trials for GLP-1 drugs in type 2 diabetes. These disparities highlight the need for more inclusive research to ensure diverse populations benefit equally from medical advancements.

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Innovative strategies to enhance engagement by rural adolescents with obesity into the TEENS+ randomized clinical trial

Melanie Bean, Sarah Farthing and Morgan Beasley
Virginia Commonwealth University

OBJECTIVES/GOALS: Despite persistent health disparities, rural individuals are underrepresented in clinical trials, due in part to access barriers. We investigated if targeted strategies enhanced recruitment, engagement, and retention of rural adolescents in the TEENS+ randomized clinical trial, a 4-month family-based behavioral weight loss intervention. METHODS/STUDY POPULATION: Adolescents (12–16 y) and parents with obesity were eligible for TEENS+. Treatment converted to virtual in COVID-19, allowing eligibility to expand to more rural areas. We leveraged Informatics, a practice-based research network, and direct marketing to identify potential rural participants. Targeted engagement strategies included: rural physician outreach, physician-endorsed letters, providing tablets and mobile hotspots, reimbursing travel, and offering in-person or remote assessment visits. Chi-square tests evaluated differences in screener completion and enrollment of rural families before (T0) and after (T1) changes were made. Noninferiority tests evaluated rural vs. nonrural retention and engagement (% attendance, % dietary self-monitoring) and engagement based on digital tool receipt. RESULTS/ANTICIPATED RESULTS: N = 211 dyads enrolled (n = 54 in T1: 48% male; 41% Black). Screener completion by rural families significantly increased from T0 (9.8%) to T1 (15.1%; p = .043). Yet, there was no significant change in rural adolescent enrollment (T0 = 10%; T1 = 9%; p = .844). Sixteen adolescents (30%) received study tablets, and none needed mobile hotspots. Mean adolescent attendance was 75%±28% for group and 94%±18% for individual sessions, with no significant differences based on rural status or tablet use. Rural adolescent self-monitoring (via app) was 28%, compared with 50% for non-rural adolescents (p = .074). Retention was 94% at 4m and 89% at 8m for T1 participants, with no differences based on rural status. At the primary endpoint (12 m), retention was significantly higher for rural (100%) vs. non-rural (87%) participants; p = .013. DISCUSSION/SIGNIFICANCE OF IMPACT: Rural adolescent screener hits increased yet enrollment was unchanged. However, rural attendance was comparable and retention exceeded, compared to nonrural participants. Strategies to yield equitable representation and engagement in clinical trials are essential for geographic generalizability and to reduce rural health disparities.

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Facilitating social physical activity among trans and gender diverse adolescents: Parents' perspectives

Sarah Kaja, Samantha J. Adler, Marla E. Eisenberg and Kathleen K. Miller
University of Minnesota

OBJECTIVES/GOALS: Inclusive physical activity (PA) interventions could improve trans and gender diverse (TGD) adolescents'

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