Introduction

• Prevalence of overweight and obesity (OW/OB) are increasing
  • Obese adults in United States in 2020 – 41.9%
• Obesity in Ohio – 37.8%
• Intellectual/developmental disability (IDD), autism spectrum disorder (ASD) and overweight/obesity (OW/OB):
  • Often co-occurring with complex medical and psychiatric histories
  • Important consideration in IDD psychiatric care
• Study population: patients of the Ohio Telepsychiatry Project
  • Adult patients with varying severities of IDD
  • Various co-occurring psychiatric conditions, medications, socioeconomic status, geographic factors, living environments

Aims of study:
• Primary – estimate prevalence of OW/OB in study population
• Secondary – identify factors associated with overweight, obesity

Research motivations:
• Improve understanding of comorbidities in OW/OB, IDD, ASD
• Identify high-risk sub-groups
• Better equip psychiatrists to prevent, target, and treat OW/OB sequelae in IDD patients

Methods and Materials

• Retrospective chart review
  • 605 patient charts through the Ohio Telepsychiatry Project/Access Ohio
  • Inclusion criteria: age 18 years old or older, diagnosis of IDD or ASD, seen at least once by a psychiatric provider in 2021
• No exclusion criteria
• IDD and ASD diagnoses stratified by severity/ICD-10 code
• Data collected/managed in REDCap (Research Electronic Data Capture)
  • Used extracted data as variables for analyses, including:
  • Presence of IDD and/or ASD diagnoses
  • BMI, comorbid conditions and genetic disorders by ICD-10 category (neuropsychological, gastrointestinal, etc.)
  • Current prescription medications categorized by drug class
  • Sex assigned at birth
  • Primary analysis (est. incl. 95% CI using continuity correction)
• Prevalence of BMI in four intervals: OW, OB I/II/III
  • OW (overweight) 25 ≤ BMI < 30
  • OB I (obesity class I) 30 ≤ BMI < 35
  • OB II (obesity class II) 35 ≤ BMI < 40
  • OB III (obesity class III) BMI ≥ 40
• Prevalence of OW, OB I/II/III by IDD severity in 6 categories
• Secondary analysis
  • Estimated the adjusted/unadjusted odd ratios, 95% CI
  • Tested associations between each predictor and outcome (OW and OB)
• Adjusted models: age, sex
• Also analyzed age as possible modifier in IDD, OW/OB association

Results

• Study population: 64.1% with IDD only
  • 11.4% had ASD only, 24.1% had both IDD and ASD
• Most IDD patients graded mild (31.8%) to moderate (28.4%) category
• Respiratory, cardiovascular, and endocrine comorbidities: ↑ as obesity ↑
• 96% of patients: 1 or more comorbid psychiatric diagnoses
  • Most treated with second-generation antipsychotics (66.3%) or antidepressants (80.3%)
• Study cohort: 78.4% (74.0, 82.2) overweight, 52.4% (47.5, 57.3) obese
  • Average BMI 31.7 kg/m2 (obese class I)
• Primary Aim:
  • Significant inverse relationship (p<0.001) where obesity decreases with increasing IDD severity
• Secondary Aims:
  • Odds of obesity = greatest in ASD alone (AOR 2.29, p.028) vs. IDD or both
  • Comorbidities with significantly ↓ odds of obesity
    • Digestive (AOR 0.56), genetic (AOR 0.46), and neurological comorbidities (AOR 0.54) incl. seizure disorders (AOR 0.38)
  • Cardiovascular comorbidities (AOR 1.84) significantly ↑ odds of OB
  • Patients taking antidepressants = significantly increased odds (double) of obesity (AOR 2.03)
• IDD severity ▲ age interaction not significant for OW or OB

Discussion

• Study supports hypothesis: study pop. ↑ OB prevalence vs. OH/USA
  • 52.4% prevalence of OB in study pop. of 412 participants w/ IDD and/or ASD
• Secondary findings:
  • Significant inverse relationship between OB severity and IDD severity
  • Variable distribution of patients of differing IDD severity, age, and living environments prompts exploration of these variables as potential modifiers
  • More severe IDD may mean higher level/more specialized care, perhaps less independence regarding food choices
  • Odds of OB greatest in ASD alone vs. IDD or both
  • OB and antidepressants: literature reinforces finding that OB may ↑ risk of developing depression and vice versa

Limitations:
• Study cohort race/ethnicity either unknown or mostly white
• Unreliability of BMI accuracy given telepsychiatry setting
  • BMI – questioned as indicator of health in broad terms, also evidence IDD patients have unique anthropometry vs non-IDD
  • Zip codes an insufficient proxy for socioeconomic status and future study must consider housing type (independent, group home, etc.)

Future directions:
• Age as modifier, place of living as mediator in IDD vs. OB
• Explore high prevalence of antidepressant, antipsychotic use in IDD patients

Conclusions

• Consider extrapolating these trends to other rural, underserved communities
• Study supports antidepressant use increases odds of OW/OB
• Future studies to evaluate whether this is causal or correlational
• Inverse relationship between OW/OB prevalence and IDD severity
• Further research to examine caretaking, independent function, physical activity, diet and mobility factors
• Higher OB prevalences in ASD alone vs. IDD or IDD/ASD
• Signal to monitor, call to action for early screening and awareness

References


The odds of obesity decrease with increasing IDD severity, while antidepressant use doubles odds of obesity.