Highlighting the Prevalence of Cardiovascular Risks Among Appalachian Children with Disabilities

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Background

- Cardiovascular risk factors include: overweight/obesity; abnormal lipids; and hypertension
- Cardiovascular risks are threats to children and adults
  - The prevalence of overweight and obesity among children has increased by 12% in the past 15 years
  - More than 40% of children have poor diets leading to increased triglyceride levels and possible abnormal lipids
  - Hypertension among children has increased by 10%
- Universal child screening for cardiovascular risk factors has historically been available in West Virginia (WV) for the past 20 years – CARDIAC Project
  - More than 10,000 fifth grade students enrolled annually
  - Kindergarten, 2nd, 8th, and 9th also enrolled for overweight/obesity and
  - hypertension only
- All children were eligible to participate in the screening at school with parent consent
- To date, this information has not been used to examine prevalence of cardiovascular risk factors among children with special health care needs and/or disabilities specifically.
- No other efforts of this size exist to obtain this information outside of WV to our knowledge.

Methods

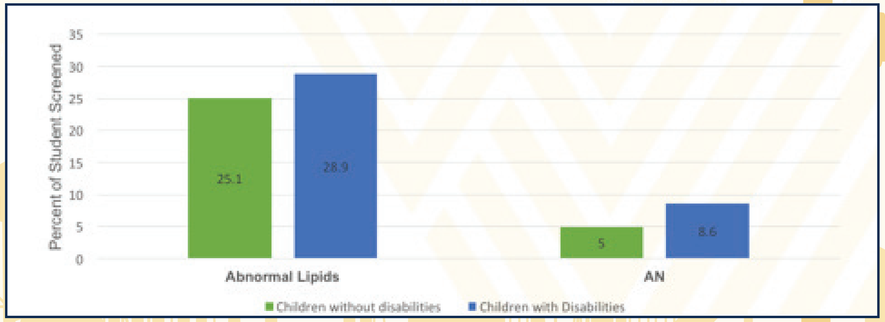
- Secondary analyses from CARDIAC Project from 2004-2010
  - 5th grade data only as it included fasting lipid profile information
- Screening Day included:
  - Overview (one week prior to screening)
  - Family history form sent back to school prior to screening
  - Screening Day included: height, weight, blood pressure, fasting blood draw, Acanthosis Nicrigans (AN)
  - Results sent to parent and primary care provider after screening
- Coded special health care needs/disability (based on type of condition/need/disability)
- Analyses:
  - Descriptive statistics used to describe sample characteristics and response ranges
  - Multivariate analyses of variance (MANOVAs) used to compare two groups (those with special needs/disabilities and those without) based on: overweight, obesity, hypertension, abnormal lipids; AN

Results

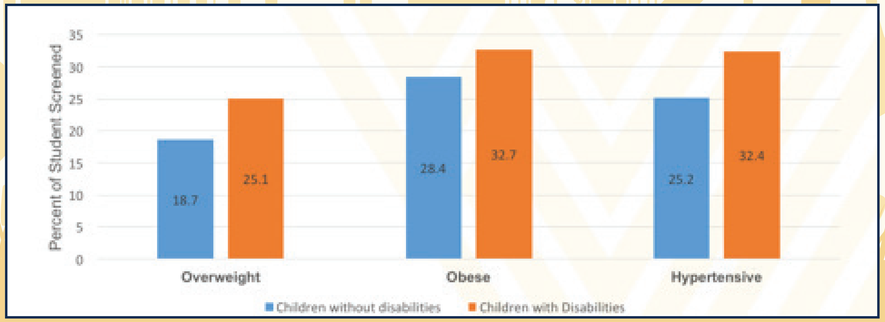
General Sample Characteristics

- 40.5% of 5th graders in WV participated in the CARDIAC screening within proposed period
  - 18.5% of sample was overweight (BMI 85-94.9th%); 27.5% was obese (BMI >95th%)
  - 27.5% of sample had presence of AN
  - 22.1% of sample had abnormal HDL; 7.7% had abnormal LDL
- 457 participants completed screening survey
- 11.4% (n=52) of sample had at least one reported special health care need or disability

Comparisons Based on Special Health Care Need/Disability



- Significantly more students with at least one special health care need/ disability had:
  - Abnormal lipids ($p<.05$)
  - AN presence ($p<.01$)



- Significantly more students with at least one special health care need/ disability were:
  - Overweight ($p<.001$)
  - Obese ($p<.02$)
  - Hypertensive ($p<.001$)

Conclusions

- Over the past two decades, WV took the lead in examining cardiovascular risks among children
- CARDIAC and other surveillance programs highlighted the finding that adult conditions were impacting our children and should be monitored
- These efforts led to the next question, which was "What are we going to do about it?"
- While the CARDIAC project was established for all children…
  - Emphasis wasn't placed on children with disabilities to ensure recruitment was equitable
  - Measures, procedures, and education was often limited on adaptive measurement for children in wheelchairs, etc.
- Similarly, interventions were developed for children at risk but…
  - Not always adaptive for children with disabilities
- These findings highlight the greater prevalence of risk for children with special health care needs/disabilities and point to the need to identify adaptive physical activity, nutrition, and other wellness intervention programs.

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