Session #6: Neuroscience research with adolescents and understudied populations
Outline

- Recruiting adolescent and understudied populations into MRI studies
- Improving MRI data quality with adolescent and understudied populations
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Background

Center for Family Research (UGA)

- More than 7,000 rural African American families have participated in CFR-sponsored research
  - ~3,000 with health biometrics
  - ~2,000 with intravenous blood draws
  - ~170 with functional magnetic resonance imaging

Developmental Neuroscience Laboratory (UCLA)

- 1,500+ participant database
Recruiting rural African Americans
Recruiting rural African Americans

Planning & Recruitment

Community Partnership Process
- Establishing trust and credibility
- Develop research protocols

- Network of Community Liaisons
- Focus Groups and Pilot Testing

- Recruitment approaches
- Home Visits
Recruiting adolescence
Recruiting adolescents

Contact and Recruitment

- Initial recruitment:
  - Presentations at schools
  - Contacting prior families
- Informational Material
  - Study-specific website
- Family follow-up and Enrollment
Recruiting adolescents

https://ucladays.wixsite.com/website
Recruiting adolescents

www.myworldmyheart.org/
Staffing and Scheduling Considerations

Staffing and Scheduling

- Staffing
  - Project Coordinator
  - Scanner Operator and Research Assistants
  - Community Research Associates
- Negotiating scanner time and hours
- Confirmations and reminders
- Other people attending
Outline

- Recruiting adolescent and understudied populations into MRI studies
- Improving MRI data quality with adolescent and understudied populations
Pre-scanning activities

- Specificity in instructions
  - What will happen, when, and why
  - Expectations of participant
  - Why important to keep still, and what that means
- Mock Scanner
- Practice in-scanner activities
- Portable metal detector
  - Hair Pins
  - Clothing
Pre-scanning activities

Specific Considerations with Younger Adolescents

- Languaging of experience: Star Wars, astronaut helmet
- Returning to mock scanner if afraid
- **Still as a statue**
  - More still = more focused = win more
  - More still = better pictures you will get
- Lot of padding and pillows, heavy blankets

Engagement and Attention during scan

- Compensation
  - Overall monetary
  - Performance-dependent monetary rewards
  - Show amount won during scan
  - Tailoring reward

- Social rewards

- Total Time
  - 30 - 75 minutes with young adults
  - 30 - 60 minutes with adolescents

(Schlund et al., 2011)
Threats to data quality

- Metal
- Movement
  - #1 threat
  - Participant comfort and alignment
  - Frequent reminders to stay still
  - Words of praise when successful
  - Measure movement in real time (FIRM)
- Poor performance
  - Varies across different tasks
- Equipment malfunction
  - Scanner, behavioral tasks
- Plan for lost data in design

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Current large-scale NIH imaging study with adolescents

Relevant Links:
- https://abcdstudy.org/ (Study Website)
- https://data-archive.nimh.nih.gov/abcd (Data Repository)
- http://fablab.yale.edu/page/assays-tools (Eprime Tasks)
Handout material

Recruitment Material

Family FAQ
Family Flyer

Protocol Illustration

Full MRI screening (online)
Sample Protocol
Handout material

Recruitment Material

Family FAQ

Family Flyer

Protocol Illustration

Full MRI screening (online)

Sample Protocol

(Casey et al., 2018)