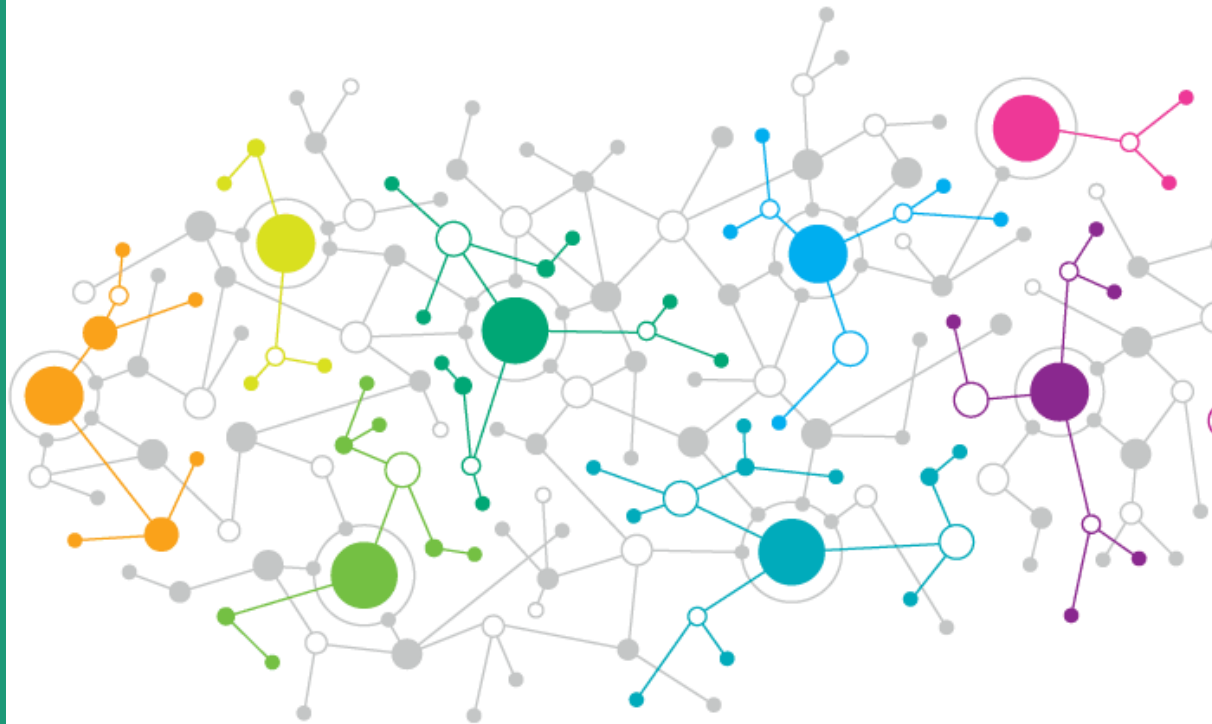# A social network analysis approach to group and individual perceptions of adolescent physical activity

Tyler Prochnow,
Megan S. Patterson,
Christina N. Bridges Hamilton
& M. Renee Umstattd Meyer

Social Network Analysis

- Understanding the connections between people and the social structure embedded in human nature

- Inherently different than traditional survey methods

- Connections > individual traits

Why use SNA in physical activity research?

- More involved than social support or co-participation
- Research suggests networks are important in adolescent PA
  - Social Selection
  - Social Influence
  - Homophily

Summer and Summer Care Programs

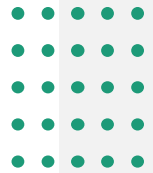TIME OF REDUCED ACTIVITY AND ACCELERATED WEIGHT GAIN

LESS STRUCTURED TIME AND PA OPPORTUNITIES

SUMMER CARE PROGRAMS PROVIDE STRUCTURED PA OPPORTUNITIES WHILE ENCOURAGING SOCIAL INTERACTION

14.3 MILLION ADOLESCENTS ATTEND SUMMER CARE PROGRAMS

Problem Statement and Research Focus

- How do adolescents perceive the activity of their peers?

- How does this compare to their perception of their own activity?

- What factors are associated with their own perceptions and other's perceptions of their physical activity?

Methods

Adolescents 8-12 at a Boys & Girls Club Summer Program

Measures:

Demographics	Perceived PA	Perceived skill competency

Social network – Who you play with talk to and do things with the most here at the club.
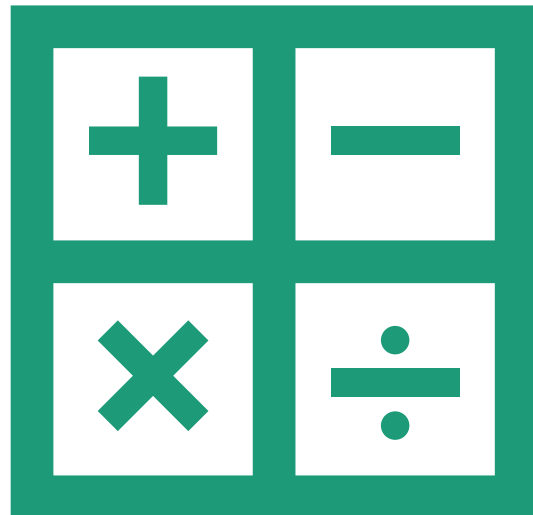
| Limited to 5	List Provided	How many hours per week do you think X is active?

Methods – Statistics

- Network centrality scores, demographics, perceived skill competency scores, network average PA – IV

- Multi Level modeling was used to determine significant associations for two DVs:
    - Adolescent's self-reported PA
    - Network's perceived PA for the adolescent
        - Others' PA perceptions were averaged across each time the adolescent was nominated

Results - Sample

- 100 Adolescents
- Mean age=9.9 years old; SD=1.3
- 47% Male
- 62% Black or African American
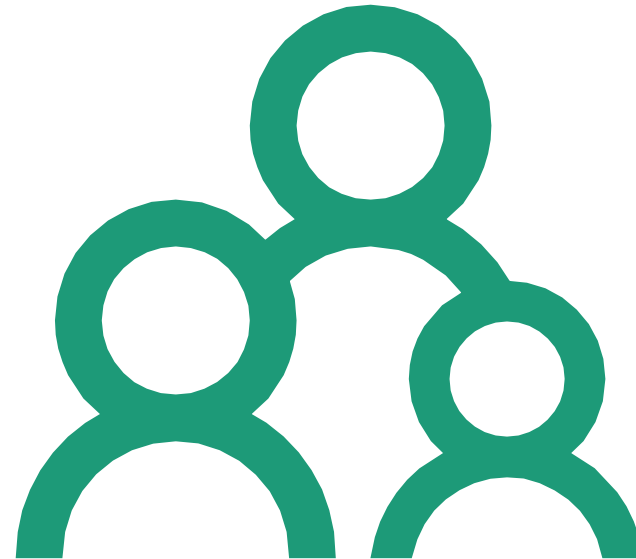
Results – Self-Reported PA

Independent Variables	Model 1 (R^2=.10) β (p-value)	Model 2 (R^2=.22) β (p-value)
Age	.10 (.32)	-.06 (.67)
Sex	-.18 (.07)	-.18 (.31)
Skill Competency	.22 (.03)*	.19 (.05)*
Closeness		-.02 (.84)
Network Average PA		.28 (.01)*

Results – Network's Perception of PA

Independent Variables	Model 1 (R^2=.06) β (p-value)	Model 2 (R^2=.24) β (p-value)
Age	.05 (.61)	-.13 (.41)
Sex	-.14 (.21)	-.21 (.35)
Skill Competency	.16 (.13)	.24 (.03)*
Closeness		-.31 (.02)*
Network* Average PA		-.17 (.10)
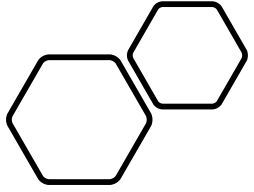
Conclusions

Adolescents perceive similar levels of PA for their friends

Perceived social norm for PA

More physically competent and central adolescents were perceived as more active

So what?

Understand the social norms and network influences on adolescent PA at summer care programs

When measuring perceptions of PA and social norms, underlying social structures and network positions could be important

Social inclusion/exclusion may have implications on perceptions of PA

Next Steps

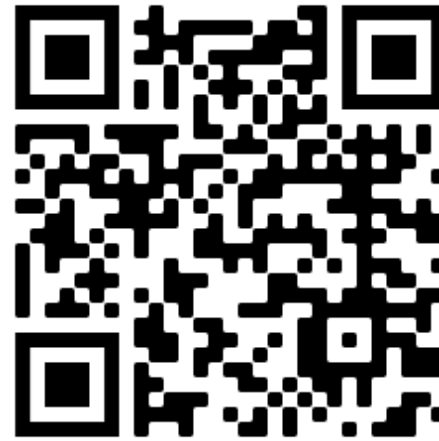**1** Collecting more data with objective measures this summer

2 Including feasibility of self-collected network data

Questions and contact

- Tyler_prochnow1@baylor.edu
- Tprochnow.com

Presentation

Project