Obesity-Related Behaviors of Korean Female Adolescents in Their Classroom-Based Peer Networks

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Introduction

In Western countries (e.g. USA)

- Adolescent obesity, a serious health problem

→ Changing diet and exercise into healthier form

In non-Western countries (e.g. Korea)

- Lower prevalence but, increasing in trends

Few related studies have been done. → Studies in those countries are necessary
Ecological model for childhood overweight

Importance of peers

• During adolescence
  – Increasing the influence of peers
  – Becoming less dependent on their parents
  – Developing similar behaviors to their peers
  ➔ Peers = an important factor for influencing diet and exercise
Proposed model

Culture

Parents
- Parenting style
- Parenting behaviors

School
- School program
- School environment

Diet and exercise behaviors of adolescents

Peer
- Peer behaviors
- Relational characteristics
Social network analysis
What is the social network?

- Collection of *nodes* and *relations*

→ Describing the structure and contents
Knows each other

Connecting two persons

Everyone knows everybody
Everyone says he or she is connected with this person.

- Directed: Say something
- Undirected: Mutually
Bridging two groups

Complete network
-Sociocentric network
-Focused on all the people within the boundaries
Ego-centric network
- Focused on personal network
- Explore the relations between ego and alters
Purpose

• To examine the **diet and exercise** of **Korean female** adolescents within classroom-based peer networks
Method

• Complete social network analysis
• 104 Korean female adolescents from a girls-only high school in Seoul, Korea
  – Inclusion criteria
    i. whose parents agreed to their participation in this study
    ii. who assented to participate in the study; and
    iii. who could read and write Korean
Method

• Instruments
  - Diet
    ▪ Adolescent Food Habit Checklist
      - 23 true/false questions (ranges: 0-23)
      - Cronbach’s $\alpha = .83$; test-retest reliability $r = 0.90$
    ▪ Food Frequency Questions
      - From the 2013 Korean Youth Risk Behavior Web-based Survey
      - How frequently adolescents had food, ramyun, fruits and vegetables
  - Exercise
    ▪ International Physical Activity Questionnaires, short version
      - Criterion validity = 0.30; test-retest reliability = 0.76
  - Network data
    ▪ Friendship nomination
      - Boundary: classroom
      - Ego and alters: adolescents in each classroom
Method

- Data analysis
  - SAS Enterprise Guide 5.1
  - UCINET 6 for Windows
Results

• Majority of the sample: normal-weight (77.3%), 18-year-old (81.6%) female adolescents
• 9.7% overweight or obese; while 11.7% underweight adolescents
• Fewer friends were nominated for exercise, compared to the number of nominated friends for diet.
• More than half of friendship nomination for having lunch together were reciprocated.
Sociograms of peer networks within each classroom

Class A

**Obesity**
- White: Underweight
- Pink: Normal weight
- Sky blue: Overweight
- Black: Obese
- Green: missing

**Eating habits:** number

**Physical activity**
- Circle: Low
- Square: Moderate
- Triangle: High

**Thickness of line:**
- number of shared experience of eating
Sociograms of peer networks within each classroom

Class B
Sociograms of peer networks within each classroom

Class C
Conclusion

• Dietary behaviors: clustered
  → Peer involvement in interventions, especially considering particular cliques
• Little is known about exercise behaviors
  → More studies assessing influential factors for exercise of Korean female adolescents