Gender Composition of Adolescents’ Friendship Networks and its Influence on Substance Use

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Learning Objectives

Following the session, learners will:
1. Identify salient factors influencing an adolescents’ alcohol use
2. Assess whether gender composition of adolescents’ networks influence substance use
3. Discuss implications for network-informed intervention in educational settings to decrease adolescent substance use.

Why should we care?

• Early initiation of substance use
• A predictor of later (mis)use
• Associated with other risky behaviors e.g. delinquency, sexually risky practices, suicide, crime
• According to Monitoring the Future, by 2009
  • Nearly half (44%) of adolescents have tried cigarettes by the 12th grade
  • 57% of 12th graders reported getting drunk at least once in their lifetime
  • 72% of students sampled have consumed alcohol (more than just a few sips)
Background/Introduction

• Gender and peer interactions/associations
  • Adolescents have and rely on different types of relationships/networks
  • E.g. based on achieved attributes: Admiration, popularity, success
  • E.g. based on aspirations: Romantic aspirations
  • Mechanisms through which these associations influence substance use
    • Vary with gender of adolescent and gender of peer group
  • However...
  • Little is known regarding relationship between gender structure of adolescent networks and substance use

Purpose

Examine whether intrapersonal and interpersonal factors, network measures, and gender composition of adolescents’ networks are associated with alcohol use.

AIM:

Examine whether intrapersonal (e.g. age, gender) and interpersonal (e.g. parent and sibling substance use) factors, network measures, and gender composition of the networks of 1,701 tenth grade adolescents in four high schools in Los Angeles, California, are associated with their alcohol use

Social Network Analysis (SNA)

• Why SNA?
  • Social networks are very crucial to the period of adolescence
  • It departs from the traditional research method of linear thinking
  • Attempt to explain individual behavior by looking beyond individual attributes alone
Methods

- Use of secondary data analysis
- Study sample
  - The Social Network Study
  - 1,701 10th graders from four high schools in Los Angeles, California
- Substance use measure
  - Drinking: measured with one question asking whether the student drank (more than just a few sips) in the past 30 days
  - Ranged from 0 (never drank) to 7 (drank all 30 days)
  - Recoded into a binary variable (0, never; 1, ever)

Network Measures

- Network measures assessed
  - Indegree
  - Outdegree
  - Density
  - Network gender composition
    - Predominantly male
    - Predominantly female
    - Equal/balanced

Covariates

- Intrapersonal factors
  - Age
  - Gender
  - Academic achievement
  - Ethnicity
- Interpersonal factors
  - Qualifying for reduced lunch
  - Parent substance use
  - Sibling substance use

Analysis done using UCINET (network analysis) & SPSS (Regression analysis)
Results — Descriptive Characteristics

<table>
<thead>
<tr>
<th>Variable</th>
<th>School 4 (n=254)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (Mean, SD)</td>
<td>15.6 (.53)</td>
</tr>
<tr>
<td>Gender (Female)</td>
<td>52.6</td>
</tr>
<tr>
<td>Ethnicity (Hispanic/Latino)</td>
<td>59.4</td>
</tr>
<tr>
<td>Academic achievement</td>
<td></td>
</tr>
<tr>
<td>Mostly A's</td>
<td>7.1</td>
</tr>
<tr>
<td>Mostly A's and B's</td>
<td>25.0</td>
</tr>
<tr>
<td>Mostly B's</td>
<td>5.8</td>
</tr>
<tr>
<td>Mostly B's and C's</td>
<td>10.4</td>
</tr>
<tr>
<td>Mostly C's</td>
<td>9.2</td>
</tr>
<tr>
<td>Mostly C's and D's</td>
<td>4.7</td>
</tr>
<tr>
<td>Mostly D's</td>
<td>3.9</td>
</tr>
<tr>
<td>Mostly D's and F's</td>
<td>2.3</td>
</tr>
<tr>
<td>Qualify for Reduced Lunch</td>
<td>88.8</td>
</tr>
<tr>
<td>Have parents who drink</td>
<td>57.1</td>
</tr>
<tr>
<td>Have siblings who drink</td>
<td>58.2</td>
</tr>
<tr>
<td>Overall substance use in school</td>
<td>38.4</td>
</tr>
</tbody>
</table>

Results — Logistic regression analysis

<table>
<thead>
<tr>
<th>Variables</th>
<th>Odds Ratio</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>1.164</td>
<td>.734 – 1.848</td>
</tr>
<tr>
<td>Gender</td>
<td>1.264</td>
<td>.555 – 2.88</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>1.344</td>
<td>.709 – 2.562</td>
</tr>
<tr>
<td>Grades</td>
<td>1.345**</td>
<td>1.154 – 1.567</td>
</tr>
<tr>
<td>Qualify for Reduced Lunch</td>
<td>2.424</td>
<td>.988 – 5.949</td>
</tr>
<tr>
<td>Parent Alcohol use</td>
<td>2.987**</td>
<td>1.558 – 5.728</td>
</tr>
<tr>
<td>Sibling Alcohol Use</td>
<td>2.384**</td>
<td>1.254 – 4.521</td>
</tr>
<tr>
<td>Indegree</td>
<td>0.894</td>
<td>.752 – 1.064</td>
</tr>
<tr>
<td>Outdegree</td>
<td>1.131</td>
<td>.888 – 1.454</td>
</tr>
<tr>
<td>Density</td>
<td>1.008</td>
<td>.889 – 1.027</td>
</tr>
<tr>
<td>Network Predom Gender_Male</td>
<td>.315*</td>
<td>.109 – .915</td>
</tr>
<tr>
<td>Network Predom Gender_Female</td>
<td>.375*</td>
<td>.140 – .980</td>
</tr>
</tbody>
</table>

Discussion

• Gender composition of the networks can be an important factor in influence transmission within peer groups/social networks
• Compared to those in a mixed-sex friendship network, being in a same-sex friendship network reduced the likelihood of drinking
• Both parental drinking and sibling drinking was associated with adolescent drinking
• Reinforces the need for life course health development perspective in studying determinants of substance use among adolescents
• In conclusion...
  • Gender composition of networks do matter
  • Even during adolescence, parent and sibling substance use behavior is also influential
Implications...

- Research
  - Studies need to clarify the risk factors for substance use across genders, network gender compositions
  - Gender does not have a fixed association with risk. Researchers need to take this into consideration

- Practice/Interventions/Programs
  - Gender-tailored interventions aimed at delaying/stopping substance use
  - School-based network interventions targeting ATOD prevention should consider gender composition of adolescents’ networks when selecting peer leaders and/or peer ambassadors
  - Involve parents and siblings in discussions and interventions targeting adolescent substance use

Discussion/Questions

For more information...

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