CREMS Webinar Series: Welcome!

2016 PROGRAM

MAY, 2016
Friendship networks in adolescence: how do they evolve and how do they influence mental health and substance use?
A/PROF TIM SLADE

AUGUST, 2016
Assessing with efficiency: Advances in the measurement of mental and substance use disorders
DR MATTHEW SUNDERLAND

NOVEMBER, 2016
Behavioural activation for the treatment of depression among substance users
DR JOANNE ROSS

AVAILABLE ON DEMAND
Exploring predictors and patterns of long-term mental health and heroin dependence
DR CHRISTINA MAREL

Full details available at: http://comorbidity.edu.au/training/webinars

Join our mailing list to receive updates about upcoming webinars.
CREMS Webinars: Available on Demand

AVAILABLE ON DEMAND

NOVEMBER 5, 2015: 2PM AEST
Locating free resources to support evidence-based practice
DR ERICA CROME

Using eHealth to treat co-occurring mental health and substance use disorders in youth
DR MARK DEADY

Co-occurring mental health and substance use disorders: how do they affect young people?
DR CATH CHAPMAN

Drug and alcohol use among young people. What can parents and schools do to prevent the harms?
DR NICOLA NEWTON AND DR LEXINE STAPNISKI

Full details available at: http://comorbidity.edu.au/training/webinars

Join our mailing list to receive updates about upcoming webinars.
What is CREMS?

CREMS aims to significantly improve

- understanding
- prevention
- treatment

of comorbid mental health disorders and substance use

NHMRC Centre of Research Excellence in Mental Health and Substance Use (CREMS)
CREMS Team

NHMRC Centre of Research Excellence in Mental Health and Substance Use (CREMS)

Directed by Prof Maree Teesson
Friendship networks in adolescence: how do they evolve and how do they influence mental health and substance use?

A/Prof Tim Slade
Overview

- Adolescence and health
- Social network analysis (SNA) as a way of understanding the link between peer friendship and health
- Recent SNA research in mental health and alcohol use
Adolescence and health

Social network analysis (SNA) as a way of understanding the link between peer friendship and health

Recent SNA research in mental health and alcohol use
Adolescence and health

- Adolescence is associated with the emergence of risky health-related behaviour
  - 1 in 3 adolescents drink in risky ways (binge drinking)
  - 35% have tried cannabis
  - 14% of adolescents meet criteria for a mental disorder

- Prevention is critical
Influence of peers on health

- Social environment is critical during adolescence
- Peers are a vital part of the social environment
- Neurodevelopmental research shows that adolescents are particularly susceptible to the influencing effects of peers (Spear, 2000)
Theories of peer influence

- Social learning theory (Bandura, 1969)
- Expectancy outcome theory (Goldman et al., 1999)
- Social comparison theory (Festinger, 1954)
- Social identity theory (Tajfel & Turner, 1986)
- Peer cluster theory (Oetting & Beauvais, 1986)
The evidence

In a review of 40 prospective studies published since 1999 all but one reported positive associations between peer use at Time 1 and adolescent use at follow-up (Simons-Morton, 2010)
But,…

- Adolescents often choose to be friends based on similarity in attitudes and behaviours (selection)
- “Birds of a feather flock together”

Influence: Friendship $\rightarrow$ Substance use?
Selection: Substance use $\rightarrow$ Friendship?
Adolescence and health

Social network analysis (SNA) as a way of understanding the link between peer friendship and health

Recent SNA research in mental health alcohol use
Social network analysis

“Your colleague’s husband’s sister can make you fat, even if you don’t know her.”

Christakis & Fowler, 2011
Social network analysis

- Self-reported attitudes and behaviours of adolescents
- Relationships between adolescents in the form of friendship nominations

<table>
<thead>
<tr>
<th>ID#</th>
<th>Sex</th>
<th>Age</th>
<th>Drink?</th>
<th>Binge?</th>
<th>Smoke?</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID001</td>
<td>M</td>
<td>13.2</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>ID002</td>
<td>M</td>
<td>13.1</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>ID003</td>
<td>F</td>
<td>13.8</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>ID004</td>
<td>F</td>
<td>12.9</td>
<td>N</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>ID005</td>
<td>F</td>
<td>12.9</td>
<td>N</td>
<td>N</td>
<td>Y</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ID#</th>
<th>ID001</th>
<th>ID002</th>
<th>ID003</th>
<th>ID004</th>
<th>ID005</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID001</td>
<td>-</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>ID002</td>
<td>1</td>
<td>-</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>ID003</td>
<td>0</td>
<td>0</td>
<td>-</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>ID004</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>ID005</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>-</td>
</tr>
</tbody>
</table>
Friendship networks
...over time
Influence
Selection

Time
Other network effects - reciprocity
Other network effects - transitivity
Poll

On a scale of 1 to 5 how much is adolescent alcohol use driven by influence versus selection?

1  3  5
Totally driven by influence Equally driven by influence and selection Totally driven by selection
A dynamic, co-evolving process
Adolescence and health

Social network analysis (SNA) as a way of understanding the link between peer friendship and health

Recent SNA research in mental health and alcohol use
SNA research – alcohol use

- **Influence and selection both important** (Osgood et al., 2013)

- **Debate about developmental timing of each mechanism**
  - Influence emerges early, selection in later adolescence (Mercken et al., 2012)
  - Selection emerges early, influence in later adolescence (Burk et al., 2012)
SNA research – alcohol use

**The nature of the friendship matters:**
- Selection is important in new but not existing friendships (Cheadle et al., 2015)
- Reciprocated friendships are not as important for alcohol use as they are for other behaviours (Giletta et al., 2012)

**Personality matters:**
- Self-control is protective against the influencing effect of peers (Franken et al., 2015)
SNA research – mental health

- Depression also subject to selection and influence effects (Kiuru et al., 2012; Stevens & Prinstein, 2005)

- Again, depends on the nature of the friendship
  - Influence only important in best friend dyads (Giletta et al., 2012)

- Perhaps explained by co-rumination
Climate Schools Combined study

- NHMRC-funded cluster-RCT of a universal program to prevent substance misuse, anxiety and depression

- 71 schools
  - Queensland
  - 25 schools
- 6409 students
- 22 schools
  - Western Australia
- 24 schools
  - NSW

26/05/2016
### CSC study – overview

<table>
<thead>
<tr>
<th>Survey</th>
<th>Alcohol</th>
<th>Alcohol &amp; Cannabis</th>
<th>Survey 2</th>
<th>Survey 3</th>
<th>Mental Health</th>
<th>Survey 4</th>
<th>Survey 5</th>
<th>Survey 6</th>
<th>Survey 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td>Term 1</td>
<td>Term 1</td>
<td>Term 3</td>
<td>Term 1</td>
<td>Term 1</td>
<td>Term 1</td>
<td>Term 3</td>
<td>Term 1</td>
<td>Term 3</td>
</tr>
<tr>
<td>Grade</td>
<td>Year 8</td>
<td>Year 8</td>
<td>Year 8</td>
<td>Year 9</td>
<td>Year 9</td>
<td>Year 9</td>
<td>Year 9</td>
<td>Year 9</td>
<td>Year 10</td>
</tr>
<tr>
<td>CO*</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>CS C*</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>CS SU*</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>CS MH*</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

**Key:**
- *CS-C = Climate Schools Combined (CSC) group*
- *CS-SU = Climate Schools Substance Use intervention only*
- *CS-SU = Climate Schools Mental Health intervention only*
- *CO – Control group*

### Survey time points:
- Survey 1: Baseline
- Survey 2: Post-Substance Use intervention
- Survey 3: Pre-Mental Health intervention
- Survey 4: Post-Mental Health intervention
- Survey 5: 6-month follow-up
- Survey 6: 12-month follow-up
- Survey 7: 18-month follow-up

**Friendship network data collected:**
- 28 schools (n=2363) at survey 2
- 23 schools (n=1870) at survey 3
Friendship nominations

“Please list up to 3 friends, who are in your year at your school, that you spent the most amount of time with in the last 6 months. Start with your closest friend.”
Friendship network in one school
Friendship and drinking
...6 months later
...6 months later
Why is this important?

- Selection?

- Influence?
Why is this important?

* Can we identify “key players” in a friendship network?
* Can we (should we?) rewire the network?

- Word of warning: There is some evidence to suggest that targeting peers can lead to increased drug and alcohol use (Valente et al., 2009)
Conclusions

- Adolescent substance use and mental health predicts friendships but is also influenced by those friendships.
- Understanding the conditions under which selection and influence exert their effect will allow for a more nuanced and sensitive prevention approach.
Acknowledgements

NHMRC Centre of Research Excellence in Mental Health and Substance Use (CREMS)

Directed by Prof Maree Teesson
Any questions or comments?
Thanks for being part of the CREMS Webinar Series.

Video recording and handouts of this and our past webinars are available at: comorbidity.edu.au/training/webinars

Join our mailing list to receive webinar updates

Join us again:

We’d love to hear you feedback! Please complete our survey at the end of the session