

Social Network Analysis: Generating Insights for Prevention Research

A person's social environment is a major influence on their development and behavior.

Prevention scientists have long recognized this. Our research often includes measures of concepts like family functioning, peer norms, school climate, and community cohesion. However, measuring social networks, or the structure of relationships between people, is much less common.

Social network analysis provides unique ways to describe relationships, such as...

Network size: How many people are in a social group?



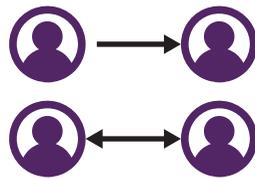
Network density: Do group members interact with lots of other members, or just a few?



Homophily: How similar are group members?



Reciprocity: Are relationships one-sided or mutual?



Like other types of variables, social network metrics can be used to describe individuals and social settings and to predict outcomes like substance use and mental health.

The Helping End Addiction Long-Term (HEAL) Preventing Opioid Use Disorder (OUD) program is the National Institutes of Health's flagship initiative to develop and test strategies to prevent opioid misuse and OUD among teens and young adults.

Several HEAL Preventing OUD research projects are using social network analysis:

Development and Implementation of a Culturally Centered Opioid Prevention Intervention for Urban American Indian and Alaska Native Emerging Adults



Study population: American Indian and Alaska Native young adults

How "connection" was defined: Talked with most in past 3 months

Preliminary findings:

- Showing participants their social network visuals can be an intervention strategy.
- Participants with more substance use within their network were more likely to use themselves and intend to use in the future. This association was weaker if network members engaged in traditional practices.
- Having many network connections with people who have lived on reservations or traditional lands was associated with lower depression scores.

Tribal Reservation Adolescent Connections Study (TRACS)



Study population: 9th- and 10th-grade students at three schools on one reservation

How "connection" was defined: School-based friends; family members; close nonschool, nonfamily individuals

Preliminary findings:

- Lifetime alcohol use was higher for students with a higher proportion of same-gender connections in their network.
- Social networks varied significantly across schools and grades.
- Successful prevention efforts will require a deeper understanding of social networks for American Indian and Alaska Native populations.

Prevention of OUD: The HOME (Housing, Opportunities, Motivation, and Engagement) Randomized Trial



Study population: Young adults experiencing homelessness

How "connection" was defined: In contact within past 6 months (first survey) or 3 months (follow-up surveys)

Preliminary findings:

- On average, 6 people were in participants' networks, with more friends than family.
- After going to a network member for help, youth felt the most relief if that person was a friend. Youth who reported higher levels of relief reported lower levels of alcohol use.
- The number of network members involved in risky behaviors (alcohol abuse, drug abuse, or commission of multiple crimes) decreased after the 6-month Housing First intervention.

To learn more about how these projects are using social network analysis in their prevention research, visit <https://heal.nih.gov/news/events/social-network-analysis>.