Social Network Approaches for Evaluating Prevention Programs and Implementing Evidence Based Programs

Chair and Presenter: Thomas Valente, PhD, University of Southern California

Presenters:
Scott Gest, PhD, Pennsylvania State University
Peter Wyman, PhD, Rochester University
Sheppard Kellam, MD, Johns Hopkins University
C. Hendricks Brown, PhD, University of Miami

Purpose of the workshop, including specific learning objectives

This workshop will introduce participants to the language, methodology, and theory of social network analysis. It will also discuss how network data can be collected efficiently and then analyzed and displayed using available programs. The workshop will then focus on how social network analysis can be used to 1) assess differential impact of interventions, 2) accelerate behavior change, and 3) accelerate the implementation of evidence based practices. We will review how SNA has been successfully used in previous prevention studies. Because many studies do not yet use SNA, we will also address barriers by examining case studies where the collection of such network data have been considered but not yet been attempted. We will close by having participants discuss their perspectives and interests in network theories, methodologies, field experiences and findings.

Objectives

- Introduce language and methodology of social network analysis
- Understand how SNA can help test both interventions and implementation strategies
- Identify factors associated with successful application of SNA in the implementation of evidence based programs
- Determine barriers to the application of SNA in the implementation of evidence based programs
- Provide resources for researchers and interventionists for the collection, analysis, and display of SNA.

Target workshop audience
The material is appropriate for all SPR attendees, but would be particularly relevant for those evaluating programs that are affected by implementing programs.
Materials to be provided to attendees
Copies of slides, sample assessment instruments.

Presenters

Scott Gest, PhD, is a noted expert in social network analysis (SNA) as applied to prevention. He has published SNA research in Prevention Science and has been applying SNA to prevention research for over 10 years. His research focuses on the role of peer relationships in behavioral development during childhood and adolescence. I am the PI of a 5-year longitudinal study (currently funded by NSF) of peer network dynamics in relation to patterns of academic achievement, school engagement and aggression in early adolescence. I am also an Investigator on a 5-year longitudinal study (funded by NIDA) of peer networks and the emergence of substance use from 6th - 9th grades. I have served as a co-advisor of several predoctoral trainees, providing access to longitudinal data sets that allow empirical study of peer networks and problem behavior in early adolescence. More recently I co-taught (with Wayne Osgood) a 1-credit course (Introduction to Social Network Analysis) in which we highlight network analysis concepts and methods that are particularly relevant to prevention research.

Thomas W. Valente, PhD, has over 20 years of experience studying social networks and behavior change and have conducted several studies examining network influences on tobacco, alcohol, substance use, fertility preferences, and many other behaviors. I have written computer programs to construct network diffusion models useful for understanding how social networks channel the flow of ideas and practices. Valente has evaluated many media and health communication programs designed to improve individual, community, and population health; and pioneered the use of social network analysis for behavior change interventions. He is an expert in social network influences and dynamics will be used to understand how social network measures moderate and mediate the effectiveness of the Pathways intervention and understand network influences on obesity and physical activity.

Dr. Wyman has had extensive experience in conducting ‘generative’ psychosocial research and translating research findings into community-based preventive interventions. From 1994 – 2004 Wyman was Co-Director of the Rochester Child Resilience Project, a series of prospective-longitudinal studies focusing on processes linked to competent development in urban youth exposed to chronic psychosocial stress, from which he contributed 25 peer-reviewed articles. Wyman and colleagues have conducted several studies in which they train student peer leaders to modify social-ecological norms within their schools to increase help-seeking norms, youth-student connections, and decrease suicide acceptance (Sources of Strength curriculum). Wyman is on the scientific advisory board of the American Foundation for Suicide Prevention and also has expertise in human subject protection. From 2002- 2007 he was Chair of the Research Subjects Review Board (University of Rochester) – Behavioral and Social Sciences.

Sheppard G. Kellam, M.D. is a public health psychiatrist who has played a major role in establishing concepts and methods for prevention science, and has contributed to knowledge about early risk factors and their malleability. He recognized the vital need to bridge the traditional gap between public education and public health prevention research. In March of 2000 he accepted an invitation of the American Institutes for Research to come full time to AIR and develop a new Center for Integrating Education and Prevention Research in Schools (Ed/Prev Center). His theoretical, methodological, and substantive contributions began with the
early intervention studies in Woodlawn, an African American community on the South Side of Chicago, from 1963 through 1982. He and colleagues coined the name developmental epidemiology, i.e., mapping the variation in developmental paths leading to health or disorders within defined populations. This work was done in close harmony with a board of Woodlawn community organization leaders. In 1996 he was awarded the Rema Lapouse Award for lifetime contributions to public health and prevention science by the Mental Health, Epidemiology, and Statistics Sections of the American Public Health Association. In 1999 the World Federation for Mental Health presented him their Distinguished Public Mental Health Award for his work in advancing the science for prevention of mental and behavioral disorders. In 2004 he was elected to be a Fellow in the Academy of Experimental Criminology. As the first president of the Society for Prevention Research elected by the full membership (1998-2001), he worked to build and strengthen SPR as a broad, inclusive international scientific forum and organization for the advancement of prevention science worldwide.

Dr. C. Hendricks Brown holds the rank of Professor of Epidemiology and Public Health, Miller School of Medicine, University of Miami. Prior to that he was a Distinguished University Health Professor in the Department of Epidemiology and Biostatistics, College of Public Health, University of South Florida. He also holds adjunct professor positions in the Department of Biostatistics and the Department of Mental Health at the Johns Hopkins Bloomberg School of Public Health. Also he is a Senior Research Scholar at the American Institutes for Research and a Collaborating Senior Scientist at the Oregon Center for Research to Practice. Dr. Brown has been actively engaged in research concerning advanced methodologies and statistics used to understand the implementation and evaluation of evidence based programs for prevention. As the director of the Center for Program Implementation Methodology, he is currently focused on understanding how advance systems science methodologies can be used to understand the implementation of prevention interventions.

Outline of workshop

9:00 – 10:15 Introduction to Social Network Analysis, Scott Gest, Pennsylvania State University

This part of the workshop will present the basic tenets of social network analysis introducing terminology and language as well as procedures and programs for calculating network indicators and displaying network structures.

10:30 – 12:00 Network Interventions, Tom Valente, University of Southern California

Valente will present a taxonomy of network interventions used to accelerate behavior change and improve organizational performance. The presentation will introduce ways that social network analysis can be used to implement evidence based programs.

Lunch

1:30 – 2:30 Social Networks and Peer Leader Identification in the Sources of Strength Program, Peter Wyman, Rochester University.

Sources of Strength (SoS) is an Leaders’ is an evidence-based program designed to increase help-seeking norms and decrease the acceptability of suicide by using trained peer opinion leaders. These leaders change the norms of students throughout their schools regarding the acceptability of suicide, help-seeking and youth-adult communication by conducting a set of well-defined messaging activities with ongoing adult mentoring (Sources of Strength curriculum;
LoMurray, 2005; Wyman et al., 2009). This presentation will detail how we used social network analysis to compare the impact of these peer leader programs across youth based on their social network positions with peers and adults.


There is a strong relationship between partnerships that support implementation and social networks. These relationships are explored in a number of prevention programs. Challenges in measuring partnerships as well as translation of these into network measures are discussed.

3:45 – 5:00 Discussion & Implications, Hendricks Brown, University of Miami. We discuss the future of social network analysis and prevention, illustrating some new opportunities that arise from e-health and mobile-health interventions, as well as in wide-scale implementation of prevention programs. Methodologic challenges are illustrated as well. An open discussion format is used to address issues and concerns raised by the participants.