

Building community partnerships: Using social network analysis to strengthen service delivery networks for a SC program serving pregnant and parenting teens

Elizabeth Radcliff, PhD; Jennifer Browder, LMSW; Claudia Cartledge, MPH, MSW

Division of Maternal and Child Health, South Carolina Rural Health Research Center, Arnold School of Public Health, University of South Carolina, Columbia, SC

Background & Purpose

In 2013 South Carolina (SC) implemented a federally funded, multi-year program designed to improve the long-term health and educational outcomes for pregnant and parenting teens. Three initial local lead agencies were responsible for coordinating the delivery of services, in partnership with other multidisciplinary community-based organizations.

Central to all communities participating in the program was the need to expand, strengthen, and coordinate local systems of care around this vulnerable population. Partnering organizations, however, may vary in their availability, resources, and priorities.¹

Despite the fact that the structure and nature of the implementing partnerships may influence the ultimate effectiveness and sustainability of a program,^{1,2,3} systems-level characteristics may receive limited attention prior to or after program funding and implementation.

Research aims

We used social network theory and analyses (SNA) to *identify needs and guide changes* in each partnerships' community partnership structure. We then measured network characteristics to observe for changes in network cohesion, function, and sustainability.^{4,5}

Methods

Design

- Statewide, cross-sectional systems-level analysis
- Social network methodology

Data collection (two time points: Nov 2014/Dec 2016)

- Primary data collection with two-stage purposeful sampling
- Used a web-based survey grounded in social network theory
- Questions related to number and length of relationships, organizational characteristics, and trust/value attributes
- Survey follow-up with email and phone reminders
- Year 1 findings reviewed during site visits

Statistical analyses

- Calculated key structural signatures of networks
- Conducted analyses using UCInet 6.538 and NetDraw⁶

Results

All three lead implementing agencies participated in the web-based survey. Survey response rate for lead sites and partners was 91.5% in Year 1. In Year 3, response rate was 68.2%.

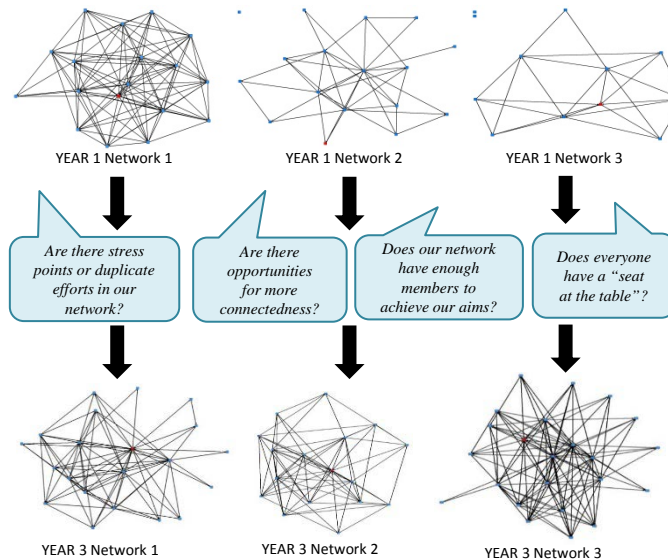


Table 1. Year 1 and 3 comparison of network size and structural signatures* for three county partnerships supporting pregnant and parenting teens in South Carolina, 2014-2016

Network measures	Network Characteristics	
	YEAR 1	YEAR 2
Network #1		
Size	18	21
Breadth	High	Moderate
Density	0.67	0.38
Centralization	0.30	0.68
Network #2		
Size	17	17
Breadth	Moderate	Moderate
Density	0.26	0.54
Centralization	0.67	0.45
Network #3		
Size	12	23
Breadth	Moderate	Moderate
Density	0.38	0.47
Centralization	0.31	0.58



Definitions of network measures

Size: Total number of participants in network.
Breadth: A structural signature of diversity; measures the number of different types of organizations and their contributions.
Density: A structural signature of cohesion; measures the presence or absence of relationships among network partners.
Centralization: A structural signature of positional equity; measuring how positions of power and influence are distributed within a network.

Discussion

Our study found that the implementing community partnerships (networks) for SC pregnant and parenting teens differed at both baseline and in Year 3 in their size and composition, and in their levels of cohesiveness, diversity, and equity of distribution of influence.

The overall systems-level progress between Years 1 and 3 in size, cohesion, and function among the original program implementation lead agencies and their community partnerships suggests that a basic understanding of network characteristics, along with a willingness to reconfigure those community collaborations, can be important to strengthening community partnerships, and thus their collective impact and potential sustainability as they serve their clients and community.

Limitations:

- Missing responses could lead to under-reporting network cohesiveness and overstating centralization.
- Surveys were completed by one individual at each organization and may not represent the feelings of others.
- Network data are state and program specific and cross-sectional, and thus cannot provide a basis for commenting on the evolution of the other networks, nor be generalized.

Public Health Implications

- Successful implementation of programs in communities may ultimately be influenced by the partners' ability to reconfigure relational patterns to better support program implementation.
- Monitoring a community partnership's characteristics over time can inform opportunities for change that may influence its effectiveness and sustainability.

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For additional information, please contact Elizabeth Radcliff, radclife@mailbox.sc.edu

For more about the SC Rural Health Research Center: <http://rhr.sph.sc.edu/index.php>

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