Ecological Contexts in the Development of Coalitions for Youth Violence Prevention : An Organizational Network Analysis

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Ecological Contexts in the Development of Coalitions for Youth Violence Prevention: An Organizational Network Analysis

Kimberly D. Bess, PhD[1], Paul W. Speer, PhD[1], and Douglas D. Perkins, PhD[1]

Abstract

Community coalitions are a recognized strategy for addressing pressing public health problems. Despite the promise of coalitions as an effective prevention strategy, results linking coalition efforts to positive community outcomes are mixed. To date, research has primarily focused on determining organizational attributes related to successful internal coalition functioning. The authors' research complements and adds to this literature by offering a network conceptualization of coalition formation in which coalition participation is studied within the broader context of local organizational networks both within and beyond a coalition. The authors examine participation in the first year of a youth violence prevention coalition exploring both differences between participating and nonparticipating organizations and levels of participation. Each network variable, reflecting prior collaboration and being viewed by other organizations as a local leader, approximately doubled the explained variance in coalition participation beyond the predictive power of all available organizational attributes combined. Results suggest that initial coalition participation emerged out of a preexisting network of interorganizational relations and provide an alternative perspective on coalition formation that goes beyond conceptual orientations that treat coalitions as bounded organizational entities that exist apart from the communities in which they are embedded.

Keywords

health coalitions, prevention, social ecology, social network analysis, youth violence prevention

With each incidence of high-profile violent acts by youth, such as the shootings in 1999 at Columbine High School, public concern and media attention have elevated youth violence as a prevention priority (Krug, Dahlberg, Mercy, Zwi, & Lozano, 2002; Spector, Coulter, Stockwell, & Matz, 2007). Coalitions of organizations have emerged as a central strategy in the prevention of youth violence at the mesosystem or exosystem levels. As no single organization or program has the reach or resources to solve complex and widespread social problems such as youth violence, coalitions are viewed as a more efficient and potentially effective approach by pooling limited human, organizational, and financial resources and problem-solving capacities throughout a community (Butterfoss, Goodman, & Wandersman, 1993; Roberts-DeGennaro, 1997). Moreover, the development of coalitions that draw on expertise in multiple community sectors is viewed as a strength, from both a knowledge and a political standpoint (Hawkins, Catalano, & Arthur, 2002; Riggs, Nakawatase, & Pentz, 2008).

We regard coalitions as a potentially viable and valuable health promotion and prevention strategy and understand their use as a *community-level* intervention aimed at *community-level* change. The research presented in this article is intended to augment current understandings of community health coalitions—and specifically youth violence prevention (YVP) coalitions—by expanding the conceptual boundaries within which they have been traditionally understood and studied. Our approach both complements and adds to the current literature by (a) going beyond the traditional focus on the internal aspects of coalitions, (b) offering a network conceptualization of coalition functioning and bringing a social network analysis approach to the study of youth violence coalitions, and (c) examining coalition participation within the context of the larger ecology of YVP organizations in a

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community (i.e., participating organizations as a subset of all organizations working in the YVP domain).

Background

Despite the promise of coalitions as an effective prevention strategy, results linking coalition efforts to positive community outcomes are at best mixed (see, Berkowitz, 2001, for a review). In an effort to understand why clear and positive outcomes have been difficult to achieve, research efforts have been directed at understanding the internal dynamics of coalitions in two areas. The first concerns the developmental processes and methods of strengthening coalitions that are central to coalition success (Florin, Mitchell, Stevenson, & Klein, 2000). Some identified developmental stages within coalitions include initial mobilization, establishing structure, building capacity, action planning, and institutionalization (Granner & Sharpe, 2004). Within this strand of the literature, coalition efficacy or performance is best understood within the context of a coalition's stage of development.

The second area of research, representing the bulk of the existing literature on coalitions, focuses on key characteristics or features that predict successful coalitions. Studies with this focus have addressed collaboration skills (Kegler et al., 2005); formalization of rules, roles, and procedures in coalitions (Butterfoss et al., 1993; Butterfoss, Lachance, & Orians, 2006); organizational decision making (Speer & Zippay, 2005); organizational processes (Florin, Mitchell, & Stevenson, 1993; Francisco, Paine, & Fawcett, 1993); management (Mitchell & Shortell, 2000); capacity-building strategies (Foster-Fishman, Berkowitz, Lounsbury, Jacobson, & Allen, 2001); and board functioning and focused planning on long-term sustainability (Feinberg, Bontempo, & Greenberg, 2008; Wells, Ward, Feinberg, & Alexander, 2008). In addition, some studies have identified distinguishing features of community coalitions based on membership (e.g., concerned citizens vs. organizational representatives) and goals such as effective service provision, advocacy, or policy change (Butterfoss et al., 1993). Additionally, scholarship often points to training models and technical assistance as important for the development, and ultimate success, of coalitions (Florin et al., 1993; Hertz, De Vos, Cohen, Davis, & Prothrow-Stith, 2008). A similar strand of inquiry addresses the complexities and nuances that are prevalent within the internal dynamics of coalitions. For example, Riggs et al. (2008) found that interventions aimed at improving quality of coalition planning, extensiveness of planning, and coalition committee functioning were associated with long-term coalition capacity.

Although advances have been made in our understanding of the internal structure and processes of coalition work, there is still a dearth of empirical evidence linking coalitions with positive community outcomes (Berkowitz, 2001; Saxe et al., 2006). Berkowitz suggests three possible explanations for why evidence remains weak, including the following: (a) the possibility that coalitions are not an effective intervention strategy, (b) the approaches used to evaluate coalitions are insensitive to the types of changes occurring, and (c) the complexity of coalitions renders measurement using traditional methodologies ineffective. Others point to the challenges community coalitions face relating to local politics, competing interests, and prior history of conflict among coalition members (Butterfoss et al., 2006; Kadushin, Lindholm, Ryan, Brodsky, & Saxe, 2005; Kegler, Rigler, & Honeycutt, 2010; Mizrahi & Rosenblum, 1993; Wolff, 2001). These studies emphasize how forces and relationships, both past and present, beyond the coalition itself have an impact on coalition functioning.

An Ecological Perspective and Network Conception of Coalition

The focus on successful coalition attributes can be contrasted with an orientation that looks at the broader ecology of the community setting where a coalition is embedded by considering multiple levels of analysis, dynamic changes over time, and multiple domains of influence from different disciplinary perspectives (Christens & Perkins, 2008). For example, studies that have taken an ecological perspective have identified important contextual influences such as geographic characteristics of the community, economic and political conditions, funding availability, and community readiness (Butterfoss et al., 2006; Kegler et al., 2010). Some also consider the context of organizational actors in a community and the importance of the historical and embedded nature of relationships among these organizations (Kegler et al., 2010; Son & Lin, 2008; Valente, Chou, & Pentz, 2007). From this perspective, coalitions are issue-based efforts that must navigate among existing community conditions and social networks to achieve success. For our purposes, organizational networks may be based on informal relationships among individuals in different organizations (e.g., in nominating an organization as a local leader in YVP) or on formal organizational collaborations (Singer & Kegler, 2004).

This study is in keeping with research that embraces such an ecological perspective and builds on a small but growing literature that examines coalitions from a network perspective. Social network analysis, although just beginning to gain wider use, has already become an important methodology for prevention, health promotion, and community research. Luke (Luke, 2005; Luke & Harris, 2007, p. 69) has argued for expanded use of social network analysis, noting that "It is an important methodological tool and theoretical paradigm that allows us to pose and answer important ecological questions in public health" (Luke & Harris, 2007, p. 69). In our review of the literature we found relatively few examples of studies in the field that took a social network approach to studying coalitions. Among these studies, most focused on collaborative components of networks (e.g., Freedman & Bess, 2011; Friedman et al., 2007; Heflinger, 1996; Krauss,

Mueller & Luke, 2004; Singer & Kegler, 2004) or exchange (Foster-Fishman, Berkowitz, et al., 2001; Foster-Fishman, Salem, Allen, & Fahrbach, 2001). In one of the few examples of research that studied the role of context in coalition development, Feinberg, Riggs, and Greenberg (2005) examined community readiness in relation to network-level characteristics in a youth advocacy network. They found that network cohesion was related to community readiness to engage in the Communities That Care community-based prevention coalition.

Although numerous studies adopt a social network approach to the study of coalitions, few have used this method to examine the ecology of local organizations in which a coalition is embedded and how this broader network of relations influences coalition formation and participation. By taking this approach, we can begin to explore patterns and predictors of participation.

Coalition Participation and Context

We conceptualize much of the research on participation in coalitions as focused on *coalition attributes*—studies examining those qualities of coalitions that are perceived or experienced by participants or potential participants as either positive or negative, thus influencing participatory behaviors. Butterfoss et al. (1993) list benefits such as increased networking, information sharing, access to resources, personal enjoyment, recognition, and skill enhancement, whereas costs of participation were mainly personal and included potential loss of time, autonomy, and resources. Coalition costs were related to poor organization as well as leadership that failed to recognize participant contributions and failed to meet coalition goals.

A second category for conceptualizing studies of coalition participation may be said to focus on *organizational attributes*—the degree to which member organizations share characteristics, goals, interests, or values with other organizations active in the coalition (Kegler et al., 2010). Sometimes referred to as purposive incentives (Butterfoss et al., 1993), the perception of shared goals in particular has been cited as both important in galvanizing initial participation (Knoke & Wood, 1981; Norris, 2001; Rich, 1980) and the most common reason given for participation (Wandersman, Florin, Friedmann, & Meier, 1987). This is parallel with the principle of homophily, which is a foundational concept in social network theory (McPhearson, Smith-Lovin, & Cook, 2001).

A third category of studies on coalition participation may be understood to focus on *network attributes*—an idea that existing ties in one dimension of behavior can predict behavior in other dimensions. In a qualitative study of contextual influences on coalition formation, Kegler et al. (2010) found collaboration history as most important in selecting the lead organization as well as for subsequent coalition membership. Specifically, they found that network connections were used initially to recruit core members and that core group members' networks subsequently influenced which organizations became new members. Our research builds on Kegler et al.'s research and uses social network methodology to examine the role of network attributes in coalition participation.

Current Study

This research investigates the social ecology of YVP in Nashville, Tennessee, by studying all organizations involved in YVP efforts in this city. In 2006, the Nashville Urban Partnership Academic Center of Excellence (NUPACE) was established through funding by the Centers of Disease Control and Prevention to address the problem of youth violence in Nashville. As part of this larger project, a broad coalition was formed to bring together local organizations and groups concerned with the impact of this persistent public health problem on community well-being. The present research focuses on these initial efforts, specifically examining all YVP organizations to discern organizations who participate and those who do not during the coalition's formative stage. We use social network analysis to focus on the patterns of relationships across all organizational actors and their structural embeddedness within the social ecology of YVP activities. We then investigate the relationship between those in the YVP sector or domain who have chosen to participate in the newly formed coalition, and their frequency of participation, and those who have not, and examine whether past network patterns are related to coalition participation.

Research Questions

This study seeks to understand whether network attributes can contribute something to our understanding of coalition participation that is distinct from the influence of organizational attributes. Our first question looks for differences between coalition participants and nonparticipants with respect to (a) past collaborations, whether related to YVP or any issue and (b) organizational attributes. Our second question examines whether network position variables predict participation (meeting and event attendance) over and above the organizational attribute variables. This question tested the contribution of network properties as compared with organizational attributes on predicting coalition participation.[1]

Method

Sampling

The population of 115 organizations that made up the sampling frame for this study was (a) every government agency and private, nonprofit organization (youth development programs, religious congregations, funding agencies, neighborhood associations, and a variety of human service and advocacy organizations) known by the research staff of

NUPACE to be engaged in local YVP work ($N = 100$) and (b) a selection of 12 public middle schools participating in a NUPACE-organized bullying-prevention action research project and the three high schools into which those middle schools feed. We then attempted to contact all 115 organizations in the sampling frame. The final sample consisted of 66 organizations that both confirmed that YVP was a significant part of their work or mission and agreed to participate in the study. In-person interviews were then requested from organizational representatives with knowledge of the range of services within their organization and with YVP efforts community-wide. The NUPACE research team knew of multiple contact persons for some organizations. Ultimately, organizations selected which staff member to participate in the interview.

Procedures and Measures

The in-depth interview was conducted during the initial months of the YVP coalition and consisted of three parts. Part 1 included open-ended questions relating to the nature of the organization's YVP work, including descriptions of activities, types of programs, and targets of change. In Part 2, organizational representatives were asked questions relating to organizational characteristics, including number of staff and volunteers, budget, YVP budget, specialized YVP training, and geographic location served. They were also asked to rate on a 5-point scale the extent to which their activities were (a) strengths-based, (b) preventive (as opposed to treatment-oriented), (c) empowering (vs. service-oriented or merely recreation-based approaches), and (d) focused on changing community conditions (rather than adapting individuals to existing community conditions). Part 3 contained the organizational network questions in which respondents were shown the full sampling frame list of 115 local organizations thought to engage in youth violence work and asked retrospectively whether (a) their organization had (or had not: dichotomously) worked with each other organization *in the past* on any issue; (b) worked together in the past specifically on YVP issues; and if yes, then (c) what types of collaboration each relationship involved (prompting for six areas of YVP including advocacy and policy work, information sharing, program delivery, resource sharing, service delivery, or training/education); and (d) which of the 115 organizations they consider a leader or innovator in YVP. The interviews averaged 50 minutes in length. Finally, each respondent was asked to identify any local organizations that were not on our list with whom they worked on YVP issues. There were very few such nominations thus confirming that our sampling frame fairly represented the relevant population of local YVP organizations.

Dependent Variable. Organizational participants in the coalition were coded based on attendance sheets at official coalition events, including monthly coalition meetings, executive committee meetings, a strategic planning meeting, and workgroup meetings over the first full year of the coalition. An organization was considered a participant at an event if a representative from that organization was present. Organizational attendance ranged from 1 to 26 meetings or events attended. Participation data were tabulated in two ways. For the first research question, which examined group differences between coalition participants and nonparticipants, the data were dichotomized with those organizations in attendance at one or more meetings considered a "participant" (the coalition's criterion) and those with no attendance at coalition meetings considered a "nonparticipant." For the second research question using correlation and regression analysis, participation was measured as a continuous variable based on the number of meetings or events attended.

Independent Variables

Organizational attributes. Five organizational attributes were examined. The first three, organization size, prevention orientation, and community change orientation are continuous variables. Organizational size was represented as the number of full-time paid employees. If an organization had part-time employees, they were included as half of a full-time employee. We used number of employees as a proxy for size because employees represent a potential resource to be deployed for participation in the coalition. Larger organizations are assumed to have more capacity to participate in extra-organizational activities, such as coalitions. The second and third organizational attributes were the degree to which organizations perceived that their efforts were focused more on prevention versus treatment—prevention orientation—and the degree to which organizations perceived their activities as focused more on changing conditions in the community or in intervening with individuals to address violence—community change orientation. These were both measured on a 5-point Likert-type scale.

The remaining two organizational attributes—specialized YVP training and organizational type—are nominal variables. The measure of specialized YVP training dichotomized organizations is based on whether their staff or volunteers received specialized training in YVP. The measure of organizational type categorized organizations into one of three possible designations: community-based organization/grassroots group, human service agency/other nonprofit, or government/public organization.

Network attributes. In social network analysis the presence or absence of connections or ties between actors in the network serves as the foundation on which all other network measures are generated. For this study, we examined the relationship between organizational network position and coalition participation using three centrality measures—two types of degree centrality (indegree and outdegree) and betweenness centrality (Wasserman & Faust, 1994).

Degree centrality is a measure of an actor's level of involvement in a network based on the number of

connections it has with other actors (Wasserman & Faust, 1994). In this network analysis, we asked each organization to identify all other YVP organizations it was connected to (for a number of different prevention behaviors, i.e., advocacy, information sharing, service delivery). When a particular organization identifies other organizations it is connected to, those connections are termed *outdegrees*. Organizations with higher outdegrees are considered more expansive or active. Alternatively, when particular organizations are selected by various other organizations, those connections are termed *indegrees*. Organizations with higher indegrees are considered more popular within the network. If two organizations each identify the other (both have an indegree and an outdegree with each other) this is termed a *reciprocal relationship*. Degree centrality scores for each actor are calculated for indegree by summing the number of times an organization is selected by another organization and for outdegree by summing the number of times an organization selects other organizations for collaboration.

In contrast to degree centrality, which is based on the number of ties or level of activity, our third measure was betweenness centrality, an assessment of the extent to which an actor plays a "go-between" role for other actors in the network who do not have direct ties. Those actors who most frequently lie on the geodesic (i.e., shortest) path between other actors have the highest betweenness scores. Actors with high betweenness are often seen as having power or influence and serve as gatekeepers or brokers, controlling the flow of information, and having access to diverse types of information in the network (Freeman, 1979).

These three network measures—indegree, outdegree, and betweenness centrality—were calculated for a total of nine network variables: (a) six different types of collaborative behaviors—information sharing, program delivery, advocacy/policy, training and education, resource sharing, and service delivery; (b) any YVP; (c) past collaboration on any issue (not just YVP); and (d) perceived leadership.

Data Analysis

Network centrality scores (indegree, outdegree, and betweenness) were calculated for each measure using UCINET 6.208 (Borgatti, Everett, & Freeman, 2002). For each organization, network scores were entered into a UCINET attribute file. Subsequently, two types of analysis were performed. First was an analysis of differences between participating and nonparticipating organizations. For each measure there were *t* tests comparing indegree, outdegree, and betweenness scores to examine differences between coalition participants and nonparticipants. *t* Tests comparing group differences related to organizational size, prevention orientation, and community change orientation were conducted. In addition, chi-square analyses were conducted examining group differences related to specialized training, organizational type, and past collaboration (on any issue). Second was an analysis of the relative predictive power of organizational attributes versus network attributes on coalition participation (number of meetings and events attended). Network attribute data and organizational attributes were used in a series of multiple regressions predicting coalition participation. The network variables used in the regressions were perceived leadership indegree, as well as indegree, outdegree, and betweenness for both any past YVP collaboration and past collaboration on any issue.

Results

The first set of research questions examined differences existing between coalition participants and nonparticipants with respect to shared organizational attributes and network position. Coalition participants, relative to nonparticipants, did not differ significantly in mean levels of prevention orientation, change orientation, organization size, or proportion receiving specialized YVP training. Nor were there significant differences in coalition participation status between the three types of organizations (public agencies, nonprofits, and grassroots community-based). In addition to *t* tests, a relational contingency table analysis was conducted examining all past collaborations (not just YVP related) between coalition participants and nonparticipants. A significant difference between groups was found ($\chi^2 = 187.023$; $p < .001$). For coalition participants, past collaboration with other coalition participants on any issue was at a higher rate than expected (expected value = 207.77; observed value = 368; ratio = 1.77) whereas for noncoalition participants, collaboration with other nonparticipants was lower than expected (expected value = 386.40; observed value = 233; ratio = 0.60). Between-group collaboration was close to the expected rate.

Differences between coalition participants and nonparticipants with regard to network structure are reported in Table 1. Coalition participants were significantly more likely to be chosen as local leaders in YVP work than nonparticipants as measured by indegree scores (participants = 9.57; nonparticipants = 4.76; $p > .01$). The differences were even greater among participants and nonparticipants with respect to outdegree and betweenness centrality, perhaps indicating a higher level of activity among participants as brokers in determining who in the entire network are perceived as leaders.

Differences were found between coalition participants and nonparticipants in the eight collaborative networks measured (i.e., advocacy/policy, information sharing, program delivery, resources sharing, service delivery, and training/education as well as on any YVP collaborations and past collaboration on any issue). Results indicate that coalition participants collaborated with significantly more organizations in the network than did nonparticipants, both in YVP activities as well as all past (including non-YVP) collaborations, based on all three centrality measures. For specific areas of YVP collaboration, participants had significantly greater indegrees than nonparticipants in each area except service

Table 1. Differences Between Coalition Participants ($N = 28$) and Nonparticipants ($N = 38$) on Network Measures

	Participant	Nonparticipant	Difference	Two-Tailed Test
Perceived YVP leader relation				
Outdegree	10.20	4.30	5.93	.001
Indegree	9.57	4.76	4.80	.01
Betweenness	139.30	35.09	104.22	.001
Any collaboration (not just YVP)				
Outdegree	25.81	13.89	11.93	.001
Indegree	24.00	14.70	9.21	.01
Betweenness	75.12	30.73	44.39	.01
Total YVP (sum of six types below)				
Outdegree	17.79	10.05	7.73	.01
Indegree	17.70	10.13	7.55	.001
Betweenness	98.55	28.15	70.4	.001
Advocacy and policy				
Outdegree	1.179	1.395	–0.22	ns
Indegree	2.1	.71	1.40	.001
Betweenness	9.39	5.37	4.02	ns
Information sharing				
Outdegree	7.21	4.16	3.06	.04
Indegree	7.96	3.6	4.36	.001
Betweenness	160.57	41.63	118.94	.001
Program delivery				
Outdegree	3.96	4.16	–1.94	ns
Indegree	5.46	3.05	2.41	.01
Betweenness	96.30	88	8.1	ns
Resource sharing				
Outdegree	5.86	3.5	2.36	ns
Indegree	6.00	3.40	2.60	.01
Betweenness	112.78	46.87	65.92	.03
Service delivery				
Outdegree	3.43	2.63	.80	ns
Indegree	3.64	2.47	1.70	ns
Betweenness	65.81	25.59	40.22	.04
Training and education				
Outdegree	3.71	4.34	–0.62	ns
Indegree	5.43	3.08	2.4	.01
Betweenness	99.67	65.67	34.00	ns

Note. YVP = youth violence prevention.

delivery. Differences were particularly strong for information sharing, which supports the above interpretation of coalition participants as brokers.

The second research question examined the contribution of organizational attributes relative to network attributes in predicting the level of coalition participation in terms of meeting attendance. This question was prompted by the relative inattention in the literature to network properties as compared with organizational attributes. Bivariate correlations among all variables modeled in the regression are found in Table 2. Overall, the pattern of correlations in the YVP network shows that service providers are generally associated with centrality in the network, public agencies have weak associations with centrality in the network, and community organizations have negative associations with centrality in the network.

In Table 3, a series of eight hierarchical multiple regressions[2] tested the contribution of network properties relative to organizational attributes in predicting the level of coalition participation. Six organizational attributes were included in all regressions, and then network properties were entered singly and sequentially to explore contributions of individual network properties to the variance in participation levels at coalition events. Our statistical analysis was constrained by

Table 2. Correlations Between Predictors of Coalition Participation: Organizational Attributes and Network Position

	Community Organization	Service Provider	Publicagenc Agency	Community Change Orientation	Prevention Orientation	Specialized Training	Organizational Size	Leadership Indegree	Total YVP indegree	Total YVP Outdegree	Total YVP Betweenness	Any Collaboration Indegree	Any Collaboration Outdegree	Any Collaboration Betweenness	Coalition Participation
Community organization	1														
Service provider	.566	1													
Public agency	−.333	−.589	1												
Community change orientation	.204	.008	−.210	1											
Prevention orientation	−.044	.075	−.042	−.095	1										
Specialized training	−.478	.183	.259	−.421	.025	1									
Organizational size	−.150	.080	.056	.005	−.072	.193	1								
Leadership indegree	−.395	.399	−.070	.015	.011	.197	.255	1							
Total YVP indegree	−.459	.199	.222	.061	−.005	.197	.342	.811	1						
Total YVP outdegree	−.232	.322	−.141	.012	.078	−.043	.104	.377	.315	1					
Total YVP betweenness	−.318	.281	−.010	.006	−.018	.078	.355	.631	.631	.763	1				
Any collaboration indegree	−.434	.200	.197	.111	.014	.185	.320	.736	.962	.299	.579	1			
Any collaboration outdegree	−.165	.138	.004	.325	.017	−.188	.138	.455	.593	.519	.531	.593	1		
Any collaboration betweenness	−.289	.153	.108	.155	.020	.016	.246	.626	.797	.302	.580	.791	.809	1	
Coalition participation	−.199	.061	.125	.209	−.204	−.140	−.042	.431	.409	.356	.423	.385	.443	.454	1

Table 3. Hierarchical Multiple Regressions Predicting Coalition Participation

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Organizational characteristics								
Community-based organization/grassroots type organization	–.424	–.291	–.150	–.358	–.268	–.200	–.253	–.222
Nonprofit agency/service provider	–.158	–.312	–.096	–.268	–.241	–.110	–.147	–.124
Community change orientation	.219	.174	.135	.235	.220	.120	.068	.121
Prevention orientation	–.235	–.237	–.244	–.261	–.228	–.253	–.260	–.258
Received specialized YVP training	–.200	–.225	–.191	–.115	–.119	–.206	–.073	–.136
Organizational size	–.038	–.157	–.183	–.082	–.240	–.154	–.110	–.153
Network characteristics								
Leadership indegree		.611						
Total YVP collaboration indegree			.522					
Total YVP collaboration Outdegree				.426				
Total YVP collaboration betweenness					.612			
Any collaboration indegree						.454		
Any collaboration outdegree							.515	
Any collaboration betweenness								.523
Adjusted R^2	.209	.491	.395	.365	.499	.354	.418	.433
Organizational contribution	.209	.209	.209	.209	.209	.209	.209	.209
Network contribution		.282	.186	.155	.289	.144	.209	.224

Note. YVP = youth violence prevention.

the small sample size, the large number of variables measured in this study, and the assumptions of interdependence in network data.[3] Our research question was driven by a broader conceptual distinction between organizational attributes and network properties, rather than a focus on specific contributions of individual variables in the regression model.

In our hierarchical regression model, the organizational attributes significantly explained 20.9% of the variance in participation ($F = 2.61$; $p < .05$) and network properties contributions ranged from an additional 14.4% to 28.9% of the variance. Results of these regressions showed a consistently positive association between network properties and coalition participation, as well as a sizable increase in the explained variance provided by the contribution of network variables.

To provide a visual representation of network position and participation rate, a map of the network of any type of collaboration on youth violence collaboration is provided (see Figure 1). Most important to note in this diagram is the tendency of coalition participants to cluster more tightly in the core of the network indicating their centrality compared with nonparticipants who tend to occupy peripheral positions within the network.

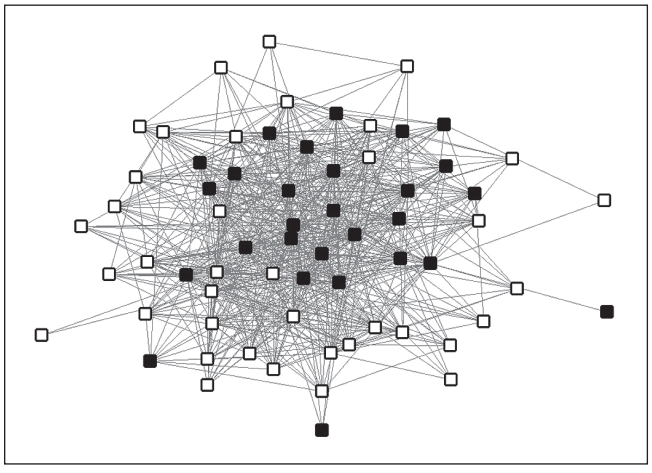

Figure 1. Total youth violence prevention collaboration network
Note. Black nodes indicate coalition participants. White nodes indicate nonparticipants.

Discussion

This research demonstrates how features of a community's organizational ecology can be used to understand coalition

participation. An ecological perspective views internal coalition relations as one set of relationships among a much broader set of interactions—both collaborative and conflictual—between organizational actors in the community. That is, we understand that a single organization or agency might relate to another in multiple ways that involve multiple interests or concerns (Gulati & Gargiulo, 1999; Kwait, Valente, & Celentano, 2001; Long, 1958). Our perspective is based on the assumption that community coalitions are embedded in, and bound to, broader networks of local organizations and that, to understand coalition formation and participation, research that takes into account this more comprehensive social ecology of community organizational actors is needed. From an intervention perspective, these ongoing interorganizational relations, or social networks, are assumed to influence the formation and structure of emergent coalitions and have the possibility of potentiating or impeding the work of a coalition and affecting outcomes (Galaskiewicz, 1985).

The results of this research support this conclusion in the following ways. First, the data indicate that organizations that became participants in the coalition had a history of past collaboration with each other at a significantly higher rate than those organizations that did not participate. This suggests that previous network connections may have been important in the initial recruitment of coalition participants during the formation period as was found by Kegler et al. (2010). Second, adding each network variable to our model approximately doubled the explained variance in coalition participation, with some network predictors alone exceeding the amount of variance explained by all organizational predictors combined. For this study, we examined whether coalition participants and nonparticipants differed with respect to five organizational attributes. Here the assumption is that similar organizations will likely behave in similar ways. The first two attributes—organizational type and organizational size—speak to potential similarities shared by actors. So, for example, larger organizations involved in YVP activities might have more human resources to devote to participating in coalition activities. Similarly, we examined whether training in YVP differentiated participants from nonparticipants. Finally, we examined the extent to which organizations differed with respect to their prevention orientation or orientation toward community-level, as opposed to individual-level interventions. The *lack* of significant correlations in Table 2 between coalition participation and any organizational attribute—even their prevention and community change orientation—suggests that what determines coalition involvement has little to do with the internal features of organizations themselves.

From a network perspective these results are not surprising, but nevertheless these findings extend much previous research on coalitions that has focused more exclusively on attributes of participant organizations when analyzing coalition functioning. That is, coalitions are typically understood as bounded organizational entities that are conceptualized apart from the communities in which they are embedded. This leads to the research practice of viewing coalitions as formed from a tabula rasa and as independent of their context. This then becomes understood as the starting point from which coalition activities emerge.

Research inquiries treat coalition participants' involvement in local politics, competing interests and loyalties, and prior history of conflict as *exogenous* factors that impede coalition functioning rather than as conditions characteristic of most communities and the community-based coalitions that operate in them. Although researchers and practitioners understand that these relational aspects may constrain coalition efforts, influence goals, and effect outcomes, they rarely are taken into account in analyses.

In this case study, we see a fairly consistent pattern of relations across all nine network variables indicating that the central actors in the broader network of organizations are also those who participate in the coalition. These results suggest that during the first year, coalition participation emerged out of a well-formed, preexisting network of relationships among organizational actors involved in YVP activities. Viewed in this way, the coalition reflects the status quo in community relationships.

Kilduff and Tsai (2003) provide some useful language by distinguishing between two idealized types of network processes—*serendipitous* and *goal-directed*—that provide a framework conceptualizing this relationship. As the name suggests, serendipitous networks are understood as emergent, slow-forming networks driven by dyadic relationships and no overarching goal. They are characterized as having "a decentralized structure with no single leader" (Kilduff & Tsai, 2003, p. 91). For example, in YVP work, this could refer to something as simple as the exchange of information at a meeting or a formal contract between two organizations involved in developing and delivering an antibullying program. In contrast, goal-directed networks are "teleological and instrumental" and have a "centralized structure with a leader." Because these networks are fast to form and rely on shared goals as the motivation for ongoing relationships, survival depends on both small wins and progress toward goal obtainment.

The YVP coalition studied here was formed with certain general goals of promoting YVP efforts and collaboration and did have leadership, from a historical–naturalistic perspective. Prior to its official formation, however, participants were apparently part of an existing serendipitous network, reflecting natural ongoing collaborative work within the community. Coalitions rarely, if ever, form among individuals or organizations who are complete strangers and, formation of this coalition cannot be separated from the history and context of existing relationships and the ties that form, over time, particular patterns of connections, or social regularities (Seidman, 1988). These social regularities may be understood as the backdrop for future relations, including goal-directed networks or coalitions. The lifespan of the

coalition is finite—it will cease because of funding, other priorities or the like, but the ties among organizational actors will continue as part of a serendipitous network process. The presence of the coalition nevertheless has the potential to alter the connections among organizational actors within the larger community. This potential would likely be realized not only through prevention activities but also by intervening in the context in which prevention work takes place. Depending on coalition goals and success in meeting those goals, this may include a more effective service delivery system, greater collaboration among a particular group of actors (e.g., churches, schools, etc.), or increased collaboration in a particular area of YVP (e.g., program delivery, advocacy, etc.).

Alternatively, coalition activities may not fundamentally alter the existing pattern of relationships in a community domain. In such a case, the development of the coalition may simply reproduce the status quo. From a macro level of analysis, the challenge for a coalition can be conceptualized as altering the existing pattern of relationships among organizations in a community. That is, one goal for coalitions may be to alter the social regularity among organizational actors within a community. This regularity may be expressed as the particular actors who participate, the frequency of their interaction, the scale of their interactions, or the nature of their interactions (Seidman, 1988). In the example of this YVP coalition, the target of change might be working to expand the organizations who participate in the coalition—particularly those YVP organizations that are generally peripheral to the network. It might be a modification of the temporal pattern of interaction across organizations—perhaps in the form of biweekly rather than quarterly communication about community conditions. It might be a change in roles or level of those interacting (e.g., directors, project managers, line staff, or volunteers in different organizations). Or it might be a modification of the nature of their collaborative efforts such as moving from a focus on service provision to a focus on advocacy.

Conclusions

As exemplified by the results of this study, scrutinizing social networks alters some fundamental assumptions about coalitions and coalition functioning. There are many potential understandings and questions about improving community health that challenge health educators focused on developing functioning, sustainable coalitions. One key contribution of this study was moving the analysis beyond the network structure of the YVP coalition to examine the dynamic relationship between the YVP coalition and the broader local network of organizations involved in YVP activities. In doing so, this study adds to the literature by beginning to account for the contextual complexity surrounding coalition formation and participation. This focus offers the potential for rich data, more complex and sophisticated analyses, and improved understanding for health educators and other social scientists committed to improving community health.

Limitations

One important limitation is that this study focuses on just a single, YVP-focused coalition and network, which are not necessarily generalizable to other kinds of coalitions and networks or other cities.

Another limitation is the necessary overlap in timing as to when the independent and dependent variables were measured. The network survey data were collected during the first, organizing months of the coalition, asking retrospectively about *past* network collaboration as well as current organizational attributes. The dependent variable—participation in the coalition—was gathered later and focused on participation during the entire first year of the coalition. It would make a stronger case for our serendipitous network interpretations if we had been able to conduct a survey before the coalition started to form or at least asked more precisely about the timing of preexisting collaborations. Although in our data collection process we were confident that respondents understood we were addressing collaborative relationships prior to the launch of the coalition, it is impossible to rule out the possibility that some informants may have interpreted the past collaboration question to include new relationships made through the initial coalition meetings, thus weakening the strength of the conclusions to be drawn here.

Finally, our measure of participation—number of meetings and events attended—is limited. Other common measures of participation include roles played and time devoted to coalition activities,[4] but in this coalition, the primary form of participation available was attendance at meetings and events.

Implications for Practice

Despite these limitations, the results suggest important factors for health educators to consider in coalition development. Community coalitions have become important mechanisms for addressing the scale of health and social problems affecting people today. Furthermore, they are viewed as modes of intervention that are sensitive to local context, and they are perceived as capable of leveraging local resources not available through other modes of engagement. A number of critiques also exist, however, most commonly concerns about the efficacy of coalition practice.

This study points to several practice-related behaviors that might improve coalitions. First, health educators should work to consider the ecological context in which coalitions are developing. Findings in this study suggest that coalition development was largely a reflection of the status quo of the broader network of YVP organizations. To improve on the status quo, it may be useful for community professionals to work at understanding the history of organizational relationships, to

consider the role of established organizations viewed as leaders, and to promote new relationships between organizations peripheral to the established organizations within a community domain. Another potential tool for practitioners is the use of network analysis to help illuminate the pattern of relationships or structural dimensions among organizational actors within a community. The use of network analysis may require the participation of those with skills in this area, or an investment of time to develop these skills; however there may be a benefit in using this tool to understand the ecology of organizations within a community. Knowledge of the structure of relationships throughout a community allows practitioners to gain insights about organizations that are distant to the coalition, organizations that may be restricting the flow of important information throughout a community, or subsets of organizations that may be acting in isolation. Illuminating these and other patterns may provide practitioners with information that can assist in more fully engaging groups in coalition participation.

The future challenge for practice is to develop deeper understandings of network properties and the role of these structures on the success of coalition activities. Much work remains on understanding how to intervene to strengthen coalitions, given different structural properties of coalition networks. Future research will need to address this issue, both for theory and for practice, and link these forms of intervention to measures of community health outcomes.

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Notes

1. Coalition attributes could not be included as a predictor as there was only one coalition examined.
2. These were regressions, not hierarchical linear models.
3. This analysis was also conducted using quadratic assignment procedure regression; results found that network variables consistently contributed greater variance than organizational variables in predicting participation. Ordinary least squares is presented here for conceptual reasons—the hierarchical procedure is not available with quadratic assignment procedure regression.
4. We thank an anonymous reviewer for identifying this limitation.

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