Evidence for the Role of Resource-sharing Networks in Coalition Development

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Abstract

Background: Accreditation bodies and sponsors of community health projects increasingly require the use of health coalitions in community health planning efforts to ensure buy-in, leverage resources, and distribute health information. Despite a substantive body of research documenting the characteristics of successful health coalitions, little is known about how team dynamics in these coalitions evolve.

Purpose: The goal of this study was to employ social network analysis techniques to evaluate whether coalitions' relative stages in Tuckman's stages of team development model were associated with specific patterns of advice-, information-, and resource-sharing among the eight coalitions participating in a region-wide forum.

Methods: Data were collected during a community health forum in June 2014, during which coalitions from an eight-county development district in Kentucky gathered to share information about their activities. Observational field notes and a questionnaire measuring relational ties among coalitions were collected during the forum and analyzed in spring 2015.

Results: The results indicate that less developed coalitions most frequently seek advice, information, and resource-sharing opportunities from coalitions that have successfully moved through the earlier stages of team development.

Implications: The study suggests that well-established coalitions may serve as "mentor coalitions" for groups in more formative stages of development, as they are a trusted source of information, advice, resources, best practices, and lessons learned.

Keywords

healthcare coalitions, social network analysis, team development

INTRODUCTION

The use of coalition structures is a strategy widely supported by health improvement intervention research on lifestyle diseases that require community engagement to address, such as obesity and substance abuse.[1,2] One area of this literature has explored how coalition members form a team.[3] After studying several small groups in diverse settings, Tuckman developed the model of stages of team development: forming, storming, norming, and performing. Forming is the orientation stage when participants get acquainted. Storming occurs as the team experiences conflict and learns how to work together. The team consolidates around tasks during the norming stage, and the performing stage characterizes a team with shared purpose and accomplishments.[3] In an article comparing Tuckman's team development stages with other models, the stages of forming and performing were found across several models, but the intervening stages were described in divergent ways.[4] Therefore, this study combined the storming and norming stages to reflect this refinement of the model.

Given the widespread use of coalitions to facilitate community-based health improvement and to meet requirements for local health department accreditation and nonprofit hospital tax status, it is increasingly important to empirically investigate the development and evolution of coalition teams. An ideal opportunity to do so was supplied when the director of a local health district in the Cumberland Valley Area Development District (CVADD) organized a forum in June 2014, during which eight CVADD health coalitions gathered to share information. This unique "coalition of coalitions" allowed for the use of social network analysis to evaluate whether the coalitions' stages of team development were associated with specific patterns of advice-, information-, and resource-sharing among the eight participating coalitions.

METHODS

Two kinds of data were collected (activities deemed exempt by the IRB of the authors' institution): (1) observational field notes on the characteristics and activities reported during each coalition's presentations; and (2) attendees' responses to a questionnaire asking them to identify from a list of all eight participating coalitions the groups from which they:
1. seek advice when planning/implementing a new project or improving an existing program;
2. request information about their ongoing community health improvement projects; and
3. share financial and/or administrative resources.

Each coalition selected one member to complete the questionnaire.

To assess whether coalitions seek support from other coalitions in the same or subsequent stages of development, a one-mode matrix of dichotomized data for each of the three types of relationships (seeking advice, requesting information, sharing resources) was created for social network analysis in UCINET.[5] UCINET produced counts of total out-degree ties in all three matrices for each of the coalitions. "Degree" is the number of ties, or relationships, that connect an actor to his network; "in-degree" is the number of ties directed to the actor, and "out-degree" is the number of ties that the actor directs to others. Then, the percentage of out-degree ties from coalitions grouped by stage to coalitions grouped in the same and the two other stages was calculated. Out-degree often is interpreted as a measure of the "gregariousness" of a node in seeking information, advice, or resources from others, while in-degree can be interpreted as the "popularity" of a node as a source of information, advice, or resources.[5]

To evaluate whether there is a difference between in-degree (popularity) and out-degree (gregariousness) associated with coalitions' stages, a normed in-degree and out-degree score was calculated in UCINET for the three matrices. The norming procedure generates a value between 0 and 1 representing the proportion of actual-to-possible ties. The normed in-degree and out-degree scores for the three matrices served as the continuous dependent variable in a series of ANOVA, and the coalitions' designation as forming, storming/norming, and performing served as the categorical independent variable. Additionally, observational field notes were combined and coded to identify the partners with whom the coalitions reported working, types of programs they planned, and methods used for implementing the programs.

RESULTS

These characteristics of coalitions' partners, programs, and methods served as the basis for classifying each coalition as being representative of Tuckman's forming, norming/storming, and performing stages. The coalitions in Bell and Harlan Counties discussed recent activities to gather coalition members and schedule initial meetings; therefore, they were classified as forming coalitions. The coalitions in Jackson, Laurel, and Whitley Counties were classified as storming/norming due to limited productivity as cohesive coalitions; their presentations involved reporting individual partners' accomplishments rather than group results. For example, the Jackson County coalition reported on programs offered by Cooperative Extension and the area high school that were not centrally coordinated by the coalition. The coalitions in Rockcastle, Knox, and Clay Counties were classified as performing, as they provided clear evidence of collaborative group accomplishments. For instance, the Rockcastle County coalition described its partners' collaborative efforts to designate the county seat as a "trail town" that provides safe opportunities for physical activity. The results displayed in Figure 1 indicate that both forming and storming/norming coalitions most frequently seek advice, information, and resource-sharing opportunities from performing coalitions.
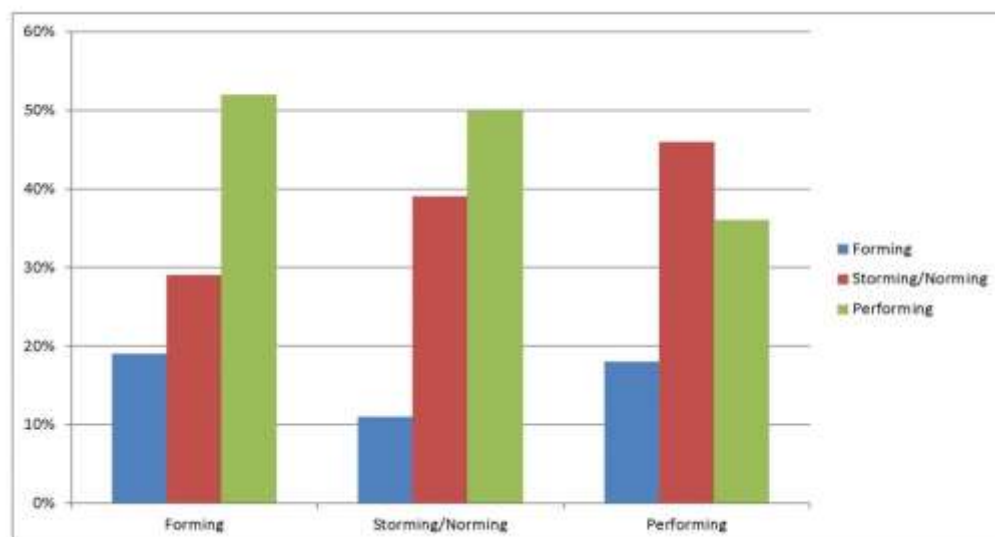

Figure 1. Resource-sharing patterns between coalitions at various stages
Note: Columns indicate the distribution of each type of coalitions' out-degree ties (for example, 52% of forming coalitions' out-degree ties were to performing coalitions).

The ANOVA revealed that differences of means for normed out-degrees and in-degrees were statistically insignificant for all but one set of relationships: in-degree ties for information-seeking ($F=10.5726$, $p=0.0136$). This finding indicates that the mean in-degree score for coalitions in at least one of the three stages is significantly different from those of the other groups. An analysis of score values showed that coalitions in the performing stage are the most frequently sought-after sources of information.

IMPLICATIONS

Although previous research on health coalitions has offered important resources for new teams seeking guidance, this information is published in a static format (e.g., as a textbook), which does not allow coalition members to ask questions, understand adaptations made in specific communities, or receive person-to-person encouragement to stay the course. The results of this study demonstrate that coalitions fill this need for dynamic, contextually sensitive guidance by collaborating with benchmark groups to share advice, information, and resources. Specifically, coalitions reach out to those coalitions that have moved through the stages of team development to the performing stage. Thus, the performing coalitions act as informal mentors to those coalitions in both the forming and the storming/norming stages.

In many disciplines, career development is furthered through mentoring, where a junior professional is paired with a senior professional who provides advice, shares information, and helps navigate the work setting. As accreditation bodies and sponsors of community health improvement projects continue to require the development of coalitions to ensure buy-in, draw on community expertise, and distribute health-related information, established coalitions could provide newer coalitions with important tools to ensure their success and sustainability. Therefore, based on the results of this study, sponsors and accreditation bodies should consider developing formal mentoring programs that encourage collaboration between higher-functioning coalitions and new/developing coalitions to provide the information, advice, or resource-sharing needed for the new coalition to reach the performing stage. Additionally, coalition leaders could pursue informal strategies for sharing information, such as semi-annual regional meetings of a "coalition of coalitions" similar to the forum hosted by the CVADD. An example of an online infrastructure for this kind of information-sharing is the National Cancer Institute's *Research to Reality* Learning Communities initiative (https://researchtoreality.cancer.gov/), which creates "virtual meeting places" for invitation-only groups to convene around common issues.

SUMMARY BOX

What is already known about this topic? The use of coalition structures is a strategy widely supported by health improvement intervention research on lifestyle diseases that require community engagement to address, such as obesity and substance abuse. Little is known about how team dynamics in these coalitions evolve.

What is added by this report? This study of "coalition of coalitions" allowed for the use of social network analysis to evaluate whether the coalitions' stages of team development were associated with specific patterns among the eight participating coalitions. The findings suggest that well-established coalitions may serve as "mentor coalitions" for groups in more formative stages of development, as they are a trusted source of information, advice, resources, best practices, and lessons learned.

What are the implications for public health practice, policy, and research? In many disciplines, career development is furthered through mentoring, where a junior professional is paired with a senior professional who provides advice, shares information, and helps navigate the work setting. Sponsors and accreditation bodies should consider developing formal mentoring programs that encourage collaboration between higher-functioning coalitions and new/developing coalitions to provide the information, advice, or resource-sharing needed for the new coalition to reach the performing stage. Additionally, coalition leaders could pursue informal strategies for sharing information, such as semi-annual regional meetings of a "coalition of coalitions."

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