Health promotion teams’ effectiveness: a structural perspective from Israel

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SUMMARY

This study addressed the question of how to structure coalitions in order to increase their engagement in multiple strategies for health promotion and consequently to improve their effectiveness. Three structural variables were chosen: (i) coalition’s heterogeneity, captured by the professional diversity of its members; (ii) coalition’s configuration, defined as the way members were involved in the coalition: full- or part-cycle membership, full- or part-time assignment, and core or peripheral membership; and (iii) coalition’s contractual collaborations with external professionals. A large non-profit network of community centers served as the setting for this study. The sample consisted of 37 coordinators of local coalitions for health promotion in Israel. The study’s design was a cross-sectional survey. Data were collected by a multimethod (semistructured interviews, self-reported questionnaires and administrative data) approach. Effectiveness was assessed by a self-report questionnaire administered to coalition coordinators. Engagements in multistrategies as well as structural variables were measured by semistructured interviews with coalition coordinators. Results demonstrated that while a homogeneous, bounded structure seemed to promote the implementation of health education programs, a more flexible coalition configuration with frequent use of professionals contributed more to working by multiple strategies and improved coalition’s effectiveness. In addition, the use of external professionals promoted action for a healthier environment, but did not add to empowering the community. The results contribute to shifting the conception of a coalition as a tightly bounded, well-defined, stable entity to that of a more fluid and permeable structure interacting with an external environment. These findings highlight the importance of incorporating structural considerations into the management of coalitions and are discussed in light of the potential costs and benefits of alternative modes of structuring such coalitions.

Key words: coalition; diversity; configuration; use of professionals

INTRODUCTION

Since the publications of the Ottawa Charter for Health Promotion (World Health Organization, 1986), understanding has grown among health promotion scholars that working by multiple strategies could advance the effectiveness of health promotion plans. Apart from health education, efforts should also focus on empowering communities, creating healthier environments, and initiating and leading policy reforms (Laverack and Labonte, 2000). Furthermore, to pursue multiple strategies, health promotion needs to be assigned to coalitions, namely as ‘a group of individuals representing diverse organizations, factions, or institutes within a community who agree to work together to achieve a common goal’ [(Butterfloss et al., 1996), p. 66]. Albeit relatively uniformly defined, coalitions have been referred to by many other terms such as alliances, horizontal integration, partnerships and collaborations [e.g. (Gillies, 1998; Baron-Epel et al., 2003)]. Empirical research on coalitions however lags well behind their rate
of adoption. Existing research on teams provides a useful point of departure, but leaves many important questions unanswered (Ancona and Caldwell, 1992). For instance, the health promotion literature has little to say about how to compose coalitions in order to carry out their task effectively (Provan and Sebastian, 1998). Most studies have typically drawn from organizational team research, and portray relatively stable teams that meet frequently and face a constant need to manage their inherent given heterogeneity. Examples are as follows: establishing hierarchical governmental structures (Gulati and Singh, 1998); focusing on the accurate mix of partners (Baron-Epel et al., 2003); leadership and conflict management [e.g. (Naidoo and Wills, 2000; Baron-Epel et al., 2003)]; and establishing shared vision and goals (Baron-Epel et al., 2003). This trend in the literature is due in part to traditions in conventional team research, and in part to the constant need of coalitions to overcome increasing conflict and to build trust, which naturally must be very deep in such a kind of team.

Coalitions share many characteristics with conventional teams, but they also differ in important ways, which may necessitate a different approach to structuring. First, they are usually composed of representative groups in which each member has a competing social identity, obligation and commitment to another organization (Baron-Epel et al., 2003), and this diversity guarantees unique links with different stakeholders in the team’s focal environment. Most previous research on diversity describes tension between the desire for more homogeneous teams that promote cohesiveness, commitment and members’ satisfaction [e.g. (Tsui et al., 1992], and the desire for diverse teams, which foster creative health plans, and a better responsiveness to the environment [e.g. (Bantel and Jackson, 1989; Ancona and Caldwell, 1992)].

Second, coalitions are often temporary task teams experiencing abundant pressure and conflict (Gulati, 1995; Das and Teng, 2002). Nevertheless, most research on coalitions has typically been conducted in a framework that advocates continuous collaboration as the preferred structure (Kegler et al., 1998; Green, 2000). True, continuous collaboration carries notable advantages for the synergism of coalitions [e.g. (Naidoo and Wills, 2000)]. But this may not be the only way to form successful coalitions. For example, Ancona and Caldwell argued that coalitions’ success depended partly on the need to create more fluid and changing team boundaries (Ancona and Caldwell, 1998). These authors introduced the concept of team configuration, and held that coalitions could be structured along three dimensions as follows: full- or partial-cycle membership, full- or part-time assignment to the coalition, and degrees of mixed core and peripheral membership. Along these dimensions the permeability and extent of the coalition boundary may range from no coalition to a full one, where the coalition forms a new organizational unit with the collaborating organizations in the background.

Third, coalitions typically confront a slightly different set of expectations from those of conventional work teams. They are often expected to engage in a complex web of external relationships to identify the unique needs of their communities, as well as to manage the coordination, knowledge transfer and political maneuvering needed to bring innovative, ‘tailor-made’ health plans to communities (Goes and Park, 1997; Provan and Sebastian, 1998). This might suggest using outside professionals for specific aims of the project, such as acquisition of information and knowledge, financing, or practical assistance. Yet despite the habit of many coalitions to take that course, to the best of our knowledge no study has empirically linked the extent the team uses professionals to its engagement with the recommended strategies for health promotion and consequent effectiveness.

In sum, working by multiple strategies for health promotion requires consideration of the team members’ skills and interaction processes, but also of how their roles are structured and configured such that the external demands are effectively met. To accomplish this, the present study addressed the question of how to structure coalitions, concentrating on three structural variables as follows: coalition’s diversity, configuration and use of external professionals. Our aim was to examine their relationships with activities of the coalitions as they pursued the four strategies recommended by the Ottawa Charter for Health Promotion, and with the coalition’s effectiveness.

METHODS

Study sample and procedure

The research population consisted of 37 local coalitions, drawn from a large non-profit national
network of community centers in Israel in 2002. The two-fold criterion for inclusion was their participation in a nationwide health promotion project called ‘healthy community centers’ and engagement in health promotion projects. Although each coalition planned and implemented health promotion activities in accordance with the needs of its community, the coalitions were supervised by the same administration, hence had relatively homogeneous practices and policies, and engaged in similar projects. Selecting coalitions in this manner provided a basis for comparison across coalitions.

All coalitions that met this criterion (as listed by the community centers’ national administration) were approached (42 in all). The coordinators of five coalitions refused to participate in the survey because they were new and insufficiently familiar with the ongoing project at their center. The 37 coalitions participating in the study represented a response rate of 88%.

Data were collected through a structured interview with the coalition coordinator at the community center.

The questionnaire
Each interview lasted ~90 min. It covered a standard set of questions, but participants were encouraged to raise and discuss related topics as well. They were assured that their responses would remain anonymous. The interview questions probed the coalition’s functional diversity, type of members’ involvement in the coalition (configuration) and extent of collaboration with external professionals; they elicited data on the extent of engagement in multiple strategies and on effectiveness criteria. Minor modifications were made, such as the inclusion of a filter question at the beginning of the questionnaire for those who reported that they did not work in a coalition for health promotion.

Measures

Coalition heterogeneity was defined as the diversity of professions embodied in the coalition (Jackson, 1992). Information for this measure was obtained by asking each coordinator to specify the various functional roles comprising the coalition. Functional heterogeneity was measured by Blau’s heterogeneity index, defined as $1 - \Sigma P_i^2$, where $P_i$ is the proportion of the total coalition that each professional category represents (Blau, 1977). This proportion is squared and summed over each category. The summed value is the degree of homogeneity in the team, and subtracting that value from 1 gives the degree of heterogeneity. Heterogeneity scores can thus range from $0 = \text{full homogeneity}$ to $1 = \text{full heterogeneity}$.

Coalition configuration was defined as the way members were involved in the coalition (Ancona and Caldwell, 1998). First, full- or part-cycle membership: did the coalition contain the same members over the full-cycle of the project or did members serve for only part of the cycle? Second, full- or part-time assignment: did members work exclusively on the coalition project or did they have other responsibilities? Third, core as distinct from peripheral membership: were some members been assigned to a ‘core’ position in the coalition and others to more ‘peripheral’ positions? (Ancona and Caldwell, 1998).

Coordinators were asked to specify on a five-point Likert-type scale, from 1 = most
coalition members (80–100%) to 5 = few coalition members (0–20%), the proportion of coalition members who (i) contributed to all stages of the project (full- or part-cycle membership); (ii) worked full- or part-time on the coalition (full- or part-time assignment); and (iii) key core members, who contributed more than others to the project (core or peripheral membership). Coordinators’ assessments were averaged across items. According to Ancona and Caldwell, high scores indicate lower proportions of coalition members who serve over the full-cycle of the project, work full-time on the project and contribute equally to the project; they indicate coalitions that are more flexible, whereas low scores indicate more bounded teams (Ancona and Caldwell, 1998).

Use of external professionals was assessed by the sum of all contractual collaborations with external professionals during the previous year. Coordinators were asked to assess the number of occasional collaborations, where some contractual arrangement was made between the coalition and external professionals, for three purposes as follows: (i) acquisition of knowledge and information; (ii) financing; and (iii) practical assistance. The number of collaborations with professionals was then summed across purposes.

Health promotion strategies were assessed as the number of activities conducted by the coalition for the attainment of each of the four health promotion strategies recommended by the Ottawa Charter Health Promotion as follows: (i) health skills transfer via health education plans; (ii) creating a healthy physical and social environment; (iii) empowering the community; and (iv) policymaking and reform. The coordinator was asked to describe in detail the coalition’s activities according to the strategies used, and the sum of activities was then used to index the strategy (examples are provided on Table 1). However, because fewer than 10% of the coordinators reported engaging in policymaking and reforms, this measure was not used for further analyses. Finally, based on the synergism assumption, multiple strategy was measured as the total number of health promotion actions across the four strategies.

Effectiveness was defined as the completion of designated products or the delivery of contracted services per specification (Shea and Guzzo, 1987). As with traditional team research [e.g. (Alper et al., 1998)], it is difficult to obtain objective effectiveness measures, because coalitions do not always collect effectiveness data (Provan and Sebastian, 1998; Gillies, 1998; Baron-Epel et al., 2003) or because effectiveness’ comparability across coalitions is limited (Kirkman and Rosen, 1999). Hence, as effectiveness criteria we used coordinators’ ratings of perceived effectiveness on five items. These were derived from pre-assessment interviews with health promotion practitioners on their goals and effectiveness standards. The items were as follows: ‘How effective is the team in health promotion knowledge transfer and skill development?’ ‘How effective is the team in developing a health promoting environment?’ ‘How effective is the team in strengthening community activities in health promotion?’ ‘Generally, how effective is the inter-organizational team?’ To assess team effectiveness, we averaged the responses of the relevant subscale. Cronbach’s alpha reliability score for the team effectiveness scale was 0.85. Concurrent

| Table 1: Examples of reported actions for attaining health promotion goals |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Strategy                    | Examples of actions taken towards that strategy                                                                                   |
| (1) Health skill transfer   | Lectures; workshops, ‘health fairs’; weekly group activities                                                                       |
| (2) Creating a healthy environment | Building health-promoting facilities in the community (sun shades, walking tracks); making community center environment ‘health friendly’ (serving healthy food, non-smoking areas); removing public hazards |
| (3) Empowering communities  | Representation of community representatives on steering committees; appointing community representatives to serve as health promoters in their communities; assembling support coalitions; developing community leadership |
| (4) Policymaking and reforms| Influencing school principals to influence dedication of school hours to discuss health issues; working with authorities to influence laws and policies |

_Note:_ actions described for strategy 2 are specific to the content of the project, whereas actions described for strategies 1, 3 and 4 were general.
validity was assessed by correlating the effectiveness measure and the ratio of community members who attended the various programs of the coalition \( (r = 0.43; P < 0.03) \).

**Control variables.** Coalition size was treated as a control variable because size is a key variable influencing a team’s effectiveness (Brewer and Kramer, 1986) and because larger coalitions have more potential for heterogeneity (Bantel and Jackson, 1989). Coalition size was measured as total number of coalition members.

### RESULTS

#### Coalition characteristics

The provision of health promotion services for a target population of up to 5000 individuals was reported by 45.5% of the coalitions. A further 40% provided services for a population between 5000 and 15000 individuals, and the remaining 14.5% did so for a population of 15000–20000. As to the type of projects the coalitions initiated, almost half of them (48.7%) focused on a healthier lifestyle through such means as walking clubs, drug and smoking prevention, and healthier nutrition. The rest (51.3%) focused on specific health problems such as back trouble and dental hygiene.

Univariate analysis indicated that neither type of activity nor the size of the target population predicted a significant share of the variance in any of the key variables examined (e.g. coalition structures, coalition’s engagement in multiple strategy or coalition effectiveness). Those variables were not included in the subsequent analyses to test the hypotheses.

The average size of a coalition was 6.13 members \( (SD = 2.85) \), ranging from 3 to 10. The main professional groups that were represented in the teams were health professionals, i.e. nurses, dieticians, physicians (42%), administrators and municipal representatives (30%), social workers and psychologists (15%), and educators and fitness instructors (13%).

Regarding the coalition coordinators’ demographics, 35% of them were men and 65% women. The average age of the coordinators was 40.08 years \( (SD = 8.13) \), and their average seniority in the current job as coordinators was 7.7 years \( (SD = 8.13) \). In education level, about 12% of the coordinators had basic schooling, 24% had participated in non-academic courses in health promotion or associated areas, 40% of them had a bachelor’s degree and 24% had an MA degree.

#### Research’s aims testing

Table 2 shows the means, standard deviations and the Pearson intercorrelations matrix for the study variables. The first aim of the study focused on the link between working by multiple strategies and health promotion. The significant correlation between total number of strategies and effectiveness \( (r = 0.35; P < 0.05) \) provided support for our prediction.

Five hierarchical regression analyses, namely health education plans, creating a healthy environment, empowering the community, working by multiple strategies and effectiveness were regressed by hierarchical analysis on their structural predictors. Following the advice of Cohen and Cohen, we conducted a hierarchical regression analysis to test the effects of the independent structural predictors above and across the effect of the control variable of coalition size (Cohen and Cohen, 1983). Accordingly, this control variable was entered into the regression equation in

**Table 2: Intercorrelation matrix of study variables**

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
<th>(7)</th>
<th>(8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Coalition heterogeneity</td>
<td>0.46</td>
<td>0.31</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) Coalition configuration</td>
<td>1.69</td>
<td>0.31</td>
<td>0.28</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3) Use of professionals</td>
<td>5.34</td>
<td>0.92</td>
<td>0.19</td>
<td>0.02</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(4) Health plans</td>
<td>3.29</td>
<td>1.57</td>
<td>-0.11</td>
<td>-0.21</td>
<td>0.16</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(5) Health environment</td>
<td>2.78</td>
<td>2.60</td>
<td>0.06</td>
<td>0.04</td>
<td>0.58**</td>
<td>0.05</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(6) Empowering community</td>
<td>3.71</td>
<td>1.1</td>
<td>0.19</td>
<td>0.04</td>
<td>-0.47</td>
<td>-0.08</td>
<td>-0.67*</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(7) Total number of actions</td>
<td>8.9</td>
<td>1.76</td>
<td>0.30**</td>
<td>0.25†</td>
<td>0.37*</td>
<td>0.88**</td>
<td>0.31*</td>
<td>0.30*</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>(8) Effectiveness</td>
<td>2.36</td>
<td>1.94</td>
<td>0.27</td>
<td>0.35*</td>
<td>0.35*</td>
<td>0.39**</td>
<td>0.18</td>
<td>0.17</td>
<td>0.35*</td>
<td>1.00</td>
</tr>
</tbody>
</table>

\( N = 37 \).

\( ^{†} P < 0.08; ^{*} P < 0.05; ^{**} P < 0.01 \).
step 1, and all effect terms of the proposed predictors, namely coalition diversity, coalition configuration and use of professionals, were entered into the regression equation in step 2.

With regard to health education plans, the findings are presented in Table 3. The joint main effects of the structural predictors accounted for 27% ($\Delta F = 3.8; P < 0.05$) of the variance in health education plans. Coalition’s heterogeneity and coalition’s configuration were negatively associated with this criterion, indicating that less heterogeneous coalitions and a bounded configuration were associated with more activities within health education plans.

The column headed ‘creating healthier environment’ in Table 3 shows that the joint effects of the structural predictors accounted for 40% ($\Delta F = 3.8; P < 0.05$) of that variance. Only the use of professionals was positively and significantly associated with this criterion, indicating that excessive use of external professionals contributed to creating a healthier environment.

The column headed ‘empowering community’ in Table 3 shows that the joint main effects of the structural predictors accounted for 34% ($\Delta F = 6.3; P < 0.01$) of this variance. Unexpectedly, the use of professionals was significantly and negatively related to this criterion, indicating that excessive use of external professionals was associated with less activity towards empowering the community.

The joint main effects of the structural predictors accounted for 50% ($\Delta F = 4.8; P < 0.01$) of the variance in working by multiple strategies, as seen in the relevant column in Table 3. Coalition’s heterogeneity, coalition’s configuration and the use of professionals were significantly and positively related to this criterion, indicating that heterogeneous coalitions that were reconstituted from time to time, depending on the requirements and that made abundant use of external professionals were associated with working by multiple strategies.

The findings in Table 3 in the column headed ‘effectiveness’ show that the joint main effects of the structural predictors accounted for 31% ($\Delta F = 4.27; P < 0.5$) of the variance in coalition’s effectiveness. The coalition’s configuration and the use of professionals were significantly and positively related to this criterion. However, contrary to our prediction, a coalition’s heterogeneity was not associated with its effectiveness.

### Table 3: Hierarchical regression analyses for predicting strategy and effectiveness criteria from structural variables

<table>
<thead>
<tr>
<th>Step variable</th>
<th>No. of health plans</th>
<th>Health environment</th>
<th>Empowering</th>
<th>Multiple strategy</th>
<th>Coalition’s effectiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control variable</td>
<td>$\beta$</td>
<td>$\Delta R^2$</td>
<td>$\Delta F$</td>
<td>$\beta$</td>
<td>$\Delta R^2$</td>
</tr>
<tr>
<td>Step 1: Control variable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coalition size</td>
<td>-0.36</td>
<td>0.13</td>
<td>2.8</td>
<td>0.09</td>
<td>2.07</td>
</tr>
<tr>
<td>Step 2: Structural variables</td>
<td>0.27</td>
<td>3.8*</td>
<td>0.30</td>
<td>0.40</td>
<td>4.4**</td>
</tr>
<tr>
<td>Coalition heterogeneity</td>
<td>-0.45*</td>
<td>-0.11</td>
<td>0.09</td>
<td>0.34</td>
<td>6.3*</td>
</tr>
<tr>
<td>Coalition configuration</td>
<td>-0.43*</td>
<td>0.09</td>
<td>0.06</td>
<td>0.50**</td>
<td>0.48*</td>
</tr>
<tr>
<td>Use of professionals</td>
<td>0.25</td>
<td>0.65**</td>
<td>-0.49*</td>
<td>0.54**</td>
<td>0.48*</td>
</tr>
<tr>
<td>Total $R^2$</td>
<td>0.40</td>
<td></td>
<td>0.49</td>
<td></td>
<td>0.47</td>
</tr>
</tbody>
</table>

Step 1 and all effect terms of the proposed predictors, namely coalition diversity, coalition configuration and use of professionals, were entered into the regression equation in step 2.

### Table 4: Aims for collaborating with external professionals: means, standard deviation and frequency of use during the last year

<table>
<thead>
<tr>
<th>Motive</th>
<th>Mean (SD)</th>
<th>Percentage of coalitions reported using professionals for this motive during the last year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Never</td>
</tr>
<tr>
<td>Acquiring knowledge and information</td>
<td>3.4 (1.7)</td>
<td>2.7</td>
</tr>
<tr>
<td>Financing</td>
<td>1.7 (1.8)</td>
<td>30</td>
</tr>
<tr>
<td>Instrumental and technical support</td>
<td>0.16 (1.8)</td>
<td>83</td>
</tr>
</tbody>
</table>

$N = 37$, $^*P < 0.08; ^*P < 0.05; ^**P < 0.01$. 

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Finally, although not one of the primary aims of the study, Table 4 shows descriptive statistics for collaboration with external professionals. Acquiring knowledge and information was the most prevalent aim for collaboration (mean = 3.4; SD = 1.7), followed by financing (mean = 1.7; SD = 1.8) and attaining instrumental and technical support (mean = 0.16; SD = 1.8).

**DISCUSSION**

This study juxtaposed three structural variables, namely a coalition’s heterogeneity, its configuration and its use of professionals, in an integrated model aimed to promote understanding of how to structure coalitions to increase their effectiveness.

**Coalition’s heterogeneity**

Heterogeneity is considered a means for monitoring a coalition’s ability successfully to manage demands for multiple interfaces with the environment, as a broad range of professionals represented in the coalition improves its potential to communicate with various professional interest groups in the community (Wandersman and Goodman, 1993; Jackson, 1996). Our findings demonstrated that low professional diversity of the coalition was associated only with an increased number of health education plans, but high professional diversity contributed to working by multiple strategy for health promotion. Implementing health education plans apparently requires fewer interactions with the environment, because apart from the limited number of interactions with external professionals to gain knowledge, health promotion professionals can develop these plans themselves. On the other hand, pursuing health promotion through multiple strategies requires much interaction with municipal and government agents to create a healthier environment, with other political figures for health reforms and with the people of the community themselves to initiate self-help plans or other community empowerment features. These findings show that the greater the demand for interfaces with the community the more the coalition might benefit from professional diversity.

However, our findings did not support the notion that greater heterogeneity will also contribute to running more activities aimed at empowering the community, or at creating a healthier environment, when examined separately. One possible explanation is that acting by multiple strategies for health promotion limits the coalition’s ability to undertake a multitude of activities to further each of the health promotion strategies separately. With limited resources, coalitions might not be able to pursue maximum actions for each strategy separately, and one strategy in which maximum resources are to be invested has to be chosen.

Nor did working in heterogeneous coalitions contribute to the improvement of the coalition’s effectiveness. This finding is consistent with previous research on conventional teams [e.g. (Drach-Zahavy and Somech, 2003)], as well as of coalitions (Baron-Epel et al., 2003), which showed that heterogeneity in itself does not improve effectiveness. Only under sound management does heterogeneity contribute to the coalition’s effectiveness, which it might even limit in certain ways. First, merely having the potential to communicate with other bodies, or even maintaining frequent communications with them, does not guarantee effectiveness (Nemeth and Owens, 1996). For example, including a community representative in the coalition does not ensure that it will resolve to take action on community empowering. Second, high heterogeneity may adversely affect other processes related to effectiveness, such as struggles over power and other resources (Jackson, 1996; Drach-Zahavy and Somech, 2003). Heterogeneity for a coalition should be decided on only after close inspection of the pros and cons of diversity for the specific goal pursued, with facilitation of external activity being balanced against the need to handle the coalition’s internal dynamics.

**Coalition configuration**

A coalition’s configuration is a second means of monitoring its interaction with the environment. Setting boundaries that determine who is and who is not a member, as well as the way each member will contribute to the coalition, and for how long, makes for temporary structures consisting only of essential workers for a particular stage of the project. This enhances the coalition’s ability to respond to the community with minimal waste of time and human resources.

Here, a loosely bounded coalition configuration, emphasizing part-time and part-cycle
members, proved positively associated with working by multiple strategies, as well as with coalition effectiveness. A tightly bounded coalition configuration was associated with a greater number of health plans implemented. These findings demonstrate that the greater the demand for interfaces with the community, the more the coalition could benefit from loosely bounded configurations, and consequently improve its effectiveness.

**Use of external professionals**

The use of external professionals is a third means of monitoring a coalition's ability to meet the community's needs better. Collaboration with a range of professionals takes place occasionally during the project to satisfy needs such as gaining information and knowledge, obtaining financing resources, or drawing practical assistance from community agents necessary for the coalition’s successful functioning.

In this sense, our findings revealed several important facts. First, the coalitions in our sample joined up with external professionals mostly to acquire knowledge and information, and less for financing and attaining technical and instrumental assistance. This finding seems surprising, particularly in face of the financing and technical challenges those coalitions confront. Further studies should explore the qualification coalition members undertake, and whether they are able to enlist financial and technical support from outside professionals in their focal environment.

Second, relying on external professionals was found to facilitate the number of actions taken towards creating a healthier environment. This finding indicates that by itself the inter-organizational coalition can hardly work toward this strategy, and is critically dependent on important resources obtained from professionals.

Third, relying on external professionals also facilitated working by multiple strategies and coalition effectiveness. These findings support our prediction that working by multiple strategy requires drawing resources from the environment, hence collaboration with professionals. In contrast, abundant use of external professionals was not associated with the number of health education plans implemented by the coalition. Implementing health education plans seems to demand fewer resources from the environment, because apart from collaboration with professionals in specific domains, these plans can be developed single-handedly by the core coalition members.

Surprisingly, contrary to our predictions the use of professionals was negatively associated with empowerment of community representatives, suggesting a trade-off between relying on professionals and on non-professionals of the community to promote health promotion. One possible explanation for this finding is that external professionals do not value the opinion of community representatives.

**Limitations and suggestions for further research**

Several limitations should be acknowledged. The first potential limitation coexists with some advantage. Our emphasis on structure, along with practical matters such as the non-cooperation of coordinators in allowing us to interview staff members, prevented us from collecting data on the internal dynamics of the coalitions, or on other less subjective effectiveness measures. Further studies should try to link factors of structure to factors of process and outcomes, drawing data from many sources apart from the coordinator, such as coalition members and customers. For example, what are the effects of loosely bounded structures on the coalition’s identity, shared vision, leadership and conflict, and how does this in turn impact the project’s effectiveness? Future studies should also try to decide whether the choice is between tightly-bounded structures, which facilitate managing internal dynamics, and loosely-bounded structures, which promote external interfaces, or whether it is possible to combine features of the two modes of structuring to produce a system that optimizes the project’s internal and external demands.

Second, one should be cautious about causal interpretations of the relationships found between structures and output variables. As the study was cross-sectional, other interpretations than ours might be given. For example, coalitions that choose to apply multiple strategies might be more obliged to utilize a broader range of professionals. Nevertheless, as our starting point was a theoretical framework, our causal inferences do seem the most logical.

**CONCLUSION AND IMPLICATIONS**

A key challenge before coalitions aiming at working by multiple strategies for enhanced
effectiveness is to develop critical linkages with other groups in their proximal environment. To facilitate these interfaces, coalitions should be structured to ease the management of these boundary links. This means considering not simply who is in the coalition but also how and for how long members function on the coalition. The findings from this study contribute to shifting the conception of a coalition as a tightly bounded, well-defined, stable entity to that of a more fluid and permeable structure interacting with an external environment.

What advice might we give to health promotion practitioners on the basis of the present findings? To promote the implementation of health education plans a homogeneous, tightly bounded structure, which made slight use of external professionals, seems to suffice. Nevertheless, for working by multiple strategies, as for striving for the overall effectiveness of the coalition a loosely bounded structure, which made frequent use of professionals, seems more adequate. The use of external professionals likewise promoted actions toward a healthier environment. Hence, coalitions should make deliberate decisions on how to be configured, considering their project’s stage and aims, rather than simply allowing these structures to emerge or to strive unthinkingly for a continuous mode of structure.

Given the limited employment of professionals especially for applying for finance and other instrumental assistance, preparation programs for health promotion practitioners should include skill training in how to enlist such resources as support, finance and technical assistance from different stakeholders in the community. Coalition’s members should also be trained to pay attention to their tendency to rely on professionals on account of empowering community members.

Finally, faced with the complex consequences of coalition diversity, coalition configuration and use of external professionals, administrators should be prepared to experiment with alternative structures, relying on the input of their various stakeholders (i.e. coalition members, external professionals and customers) for feedback on successes and failures. Unfortunately, many teams experience difficulties in changing their structure in response to changing environments (Moon et al., 2004), a finding that circumscribes the benefit of the latter suggestion. To succeed, managers need to supply external supports to smooth the variation in coalitions’ composition. These might include training programs aimed at increasing team processes, reward systems (team-based bonuses) that highlight the value of collaborative behavior, or goal-setting feedback systems that explicitly monitor and manage teamwork (Moon et al., 2004). These processes should be accompanied with corresponding climate that is focused on experimentation, tolerance for ambiguity, and adaptation.

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