Title
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Authors
Porter, Patricia G.
Ross, Leslie
Chapman, Ronald W.
et al.

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Patricia G. Porter, RN, MPH, CHES
Institute for Health and Aging, University of California, San Francisco

Leslie Ross, PhD
Institute for Health and Aging, University of California, San Francisco

Ronald W. Chapman, MD, MPH
Solano County Health and Social Services Department

Neal D. Kohatsu, MD, MPH
California Department of Health Services

Patrick Fox, PhD
Institute for Health and Aging, University of California, San Francisco

Corresponding Author:

Patricia G. Porter, RN, MPH, CHES
Associate Director, Integrating Medicine and Public Health Program
Institute for Health and Aging, University of California, San Francisco
3333 California Street, Suite 340, San Francisco, CA 94118
patricia.porter@ucsf.edu

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Abstract

Objective Empirically examine medicine and public health partnership factors that are associated with partnership success.

Methods 329 medicine and public health partnership informants were interviewed to assess factors associated with success in achieving partnership goals.

Results Partnership formation; partner recruitment; barriers to collaboration; and leadership/governance variables were not predictive of partnership success. Partnership duration was significant in predicting success in achieving outcomes.

Conclusions Factors identified in the literature are not as salient as believed in insuring the success of medicine and public health partnerships. The longer a partnership can remain intact (i.e., minimally longer than one year), irrespective of the particularities of the formation and structure of the partnership, the greater the probability that the partnership will achieve its desired outcomes.

Prominent professional groups, researchers, and policy makers have advocated stronger linkages between medical and public health sectors that can contribute to improving the health of populations.[1,2] In 1996, the Medicine and Public Health Initiative was established by the AMA and APHA with this goal in mind. In the early 20th century the relationship between the two sectors was much closer than today, with the functional separation of the two emerging later in the century.[3] This separation was driven by a number of factors including a paucity of incentives and structures to support cross-sectorial relationships, tensions due to overlapping professional interests, and the emergence of profound professional cultural differences.[4]

Although the idea of collaboration is as old as human societies, there have been few empirical studies that have examined factors associated with successful collaborative efforts between the medicine and public health sectors. However, the literature suggests that successful collaborations can be identified by examining the dynamics of partnership formation and development.

Dynamics of Partnership Formation and Development

The dynamics of partnership formation and development affect how collaborative efforts come to be organized, how they develop, and how they are formalized. The literature on partnerships identifies four basic features characterizing partnership evolution: 1) the reason for formation; 2) identification and recruitment of partners; 3) benefits and barriers to collaboration; and 4) leadership/governance.

Reasons for Partnership Formation

The most common conditions that are posited to result in the convening of a partnership are: 1) a mutual problem is identified that requires a partnership for correction or improvement; 2) meeting a regulatory requirement; 3) failure of efforts to address a problem; 4) resource scarcity; 5)

a history of successful collaboration among individuals/groups; 6) the availability of new resources or funding; and/or 7) an effective, respected and motivated individual who, or organization that, seeks assistance in improving an unsatisfactory situation.[5-12] The importance of a shared vision and a shared commitment that create a common identity and collective purpose has also been cited, as partners must believe that they are stronger together than they would be separately.[4,5,7,10,13-24] Lasker et al. also refer to partnership synergy as a key factor for partnership success. Synergy is defined as "The extent to which the perspectives, resources, and skills of its participating individuals and organizations contribute to and strengthen the work of the group."[31]

Identification and Recruitment of Partners

Seeking and securing a broad representation of active members and maintaining an open door have also been seen as critical to the success of a partnership, as individuals and organizations are more committed to the implementation of plans if they participated in the planning process. When identifying potential partners, conveners or sponsors tend to opt for what is familiar; desire to work with like-minded people; look for exclusive or at least consistent access to scarce or valuable resources; and engage partners willing to share expertise.[14,15,20,24,25]

Logsdon[32] identified two factors that influence an organization's willingness to participate in a partnership: the degree to which the organization perceives it has a stake in solving the problem relative to its self-interests, and the organization's perceived interdependence with other partners in devising a solution. Gray[14] identified five inter-related factors that stakeholders weigh in deciding whether or not to collaborate: is the status quo (related to the issue/problem) acceptable?; will the collaboration produce positive outcomes, enhance opportunities to satisfy needs, and support collaboration?; is it possible to reach a fair agreement?; are all stakeholders equal players in negotiations?; and will the other party or parties agree to collaborate? Criteria have also been

developed and used for entering into formal collaborative relationships based on specific mission, planning, finance, and operations principles. [26]

Benefits and Barriers to Collaboration

Potential benefits of joining a partnership that have been identified include: combining resources and dividing labor; sustaining motivation through commitments to other collaborators; access to information, technology and technical expertise; greater flexibility in inventing solutions; greater perceived influence over decision making; opportunities to educate other stakeholders; improved communication among partners; and creating energy to complete projects through interpersonal relationships. [8,14-16,20,27,28]

It has also been posited that a reluctant stakeholder's fear of being left out is at times sufficient to induce a commitment to collaborate, or one party may want to prevent another from substantially improving its relationship with a third party and will agree to participate in order to prevent the other two from strengthening their relationship.[14] Collaborative attempts may fall short of ideal (or not even be initiated) due to institutional disincentives (such as limited time and resources), an adversarial history, a cultural orientation toward "self" rather than community, perceptions of risk and power, and the technical complexity of the issues.[14,29]

The risk of missing a rare, potentially beneficial opportunity may motivate organization leaders to enter into partnerships,[16] and joining a partnership increases the predictability of the environment by reducing the level of uncertainty.[30] To reduce barriers to collaboration, it is thought important to determine the alignment of partners' concerns and expectations; clarify reasons the partners need each other to solve the perceived problems;[14] clarify the roles, responsibilities, and contributions of each partner early in the partnership,[4,20,33] and, ideally, document these expectations and agreements to avoid unfounded expectations.[14,20]

Leadership/Governance

The literature suggests that when a partnership has strong leadership, motivated and committed members, a meaningful conduit for two-way communication, a solid planning process, a strategic sense of which activities are worth undertaking, and well-defined goals, its chance for survival and for achieving short and long-term outcomes is enhanced.[7,34] Ideally, the leadership of a successful partnership should be impartial and flexible, support the goal of shared power, and be capable of establishing, legitimizing and guiding the partnership.[4,5,10,13-15,20,35]

Conversely, it has been noted that at times the nature of a partnership is such that a formal leader is not required to be successful. In this case, the partnership usually has a champion or convener whose main objective is to help the partnership succeed.[19] A convener may be valuable as s/he typically facilitates and coordinates the work of the partnership, and ideally possess leadership skills.[13]

The quality of communication in partnerships has also been noted as positively related to coordination and negatively related to conflict.[5] Good channels of communication – at every level and phase of the collaboration – are needed to build a common language among partners; to foster trust and mutual respect; to support group decision making; to keep partners fully informed about what is going on; to enable them to learn about each others' concerns, values and work; to air disagreements; and to provide them with avenues to respond to changes and emerging problems.[4]

The most informal form of governance is based on loosely structured agreements that are maintained by mutual expectations and patterns of behavior. A more formal governance (e.g., memorandum of understanding or contract) is used when the partners don't have a history of working together, have a history of an unsuccessful partnership, or there is a greater perception of risk compared to a partnership maintained by mutual expectations.[25] Berquist[15] suggests that the

following conditions lend themselves to the need for a formal written agreement or contract: 1) the partnership and the organizations that constitute it are numerous and large; 2) the partnership and the organizations that constitute it are complex; 3) the cultures of the partnering organizations are formal and bureaucratic; 4) the environment the partnership will operate in is turbulent or unpredictable, or both; 5) the members are not experienced in working with one another; and 6) the product or service offered through the partnership is uniform and provided in volume. In the end, partners must be firm in their commitment to a form of governance that best meets the goals of protecting and sustaining the partnership.[21]

The emergent emphasis on attempting to form closer collaborations between the medicine and public health sectors has invigorated efforts to understand some of the factors that are important to the success of collaborative efforts. Unfortunately, a large proportion of the literature addressing the effectiveness of partnerships relies on anecdotal information. In this paper, we empirically examine medicine and public health partnerships to assess the degree to which factors identified in the partnership literature are associated with partnership success. We tested the following hypothesis:

Partnerships that:

- emerge around a defined health problem (partnership formation);
- are composed of partners who have worked together successfully in the past (identification and recruitment of partners);
- have, on balance, more perceived benefits than barriers (perception of benefits and barriers);
- have effective leadership (leadership);
- have explicit partner expectations (governance); and
- have been established one year or more;

will have a higher likelihood of achieving the partnership's goals.

Methods

Sample

We identified medicine and public health partnerships using snowball sampling. This technique relies on previously identified members of a target group to identify other members of that group.[36] At the outset of the project, we identified numerous prominent individuals who were leaders in medicine and public health entities in California. Our goal was to identify all existing medicine and public health partnerships in the state. We identified partnerships in which the members were working to more effectively and more efficiently improve the health of a community or target population or both, and excluded partnerships that were involved only in training activities.

We used several methods to identify the population. The first employed the use of a phone-based interview of over 200 individuals identified by the prominent medicine and public health leaders, mentioned above, and by the project staff. These individuals represented a broad sampling of medicine and public health. Table 1 lists the types of organizations initially identified. We obtained lists of partnerships and contact names from each of the individuals. We also solicited the names of additional people to contact who had knowledge of other partnerships.

Table 1 here

Mailing lists were also obtained from state agencies containing community-based organizations; mental health agencies; maternal, child and adolescent health programs; and county health departments. Using these mailing lists, approximately 500 letters were sent requesting names of partnerships they were involved in or were aware of and their contacts. We also published articles in two statewide newsletters that described the background of this project and requested

information regarding partnerships from the readership. The audiences for the newsletters were physicians and nurse practitioners.

We achieved saturation after four months of intensive follow-up and interviews, in that we were not finding any new partnerships or obtaining additional contact information for new partnerships. This effort yielded the identification of 574 unique partnerships. We eliminated 80 partnerships from the 574 identified for the following reasons: 1) did not to have active representation from either medicine or public health; 2) the work of the group did not involve a shared mission or goal-setting process; or 3) the partnership was not currently active. This resulted in a final sample of 494 partnerships.

Data Collection

We designed a survey instrument to characterize medicine and public health partnerships in California. We explored factors derived from the literature that were thought to be predictive of successful partnerships. In addition to a review of the relevant literature, we interviewed six individuals who are recognized as experts in this field, based on substantial publication records. We discussed the specific concepts and issues that we identified in the literature and asked these experts to identify additional characteristics or concepts that they felt were important to explore. All agreed that our search and survey would be biased in the direction of successful partnerships, as little is known or published about partnerships that fail. The recommendations made by the experts were incorporated in our instrument.

Our instrument initially contained 41 items. It was field-tested with a representative from each of 10 different partnerships in California by phone interviews lasting from 45- 60 minutes. As a result of the field test, significant revisions were made to the questionnaire. The final version featured 22 closed-ended questions. Most questions allowed for multiple choice responses and

included “other – please describe” options. The time to complete the questionnaire ranged from 10-20 minutes. Table 2 illustrates the concepts derived from the literature and the questions used to operationalize the factors.

Table 2 here

A cover letter was developed that described the project and use of the data. Respondents were asked to forward the survey to a more appropriate person if they did not possess the knowledge and experience necessary to accurately complete the survey. The research protocol was approved by the Committee on Human Research (CHR), University of California, San Francisco.

The survey was initially mailed during the summer of 1999. Approximately one month following the initial mailing, a reminder letter was sent to all individuals who had not returned their survey. In an effort to increase the response rate, an additional reminder mailing and phone follow-up were conducted with individuals who had not previously returned their survey. A total of 36 partnership representatives refused to complete the survey, most often citing that they simply did not have enough time to complete it, an additional 126 partnership representatives did not return the survey, while three partnerships were duplicative (i.e., were identified by two different names). This resulted in a final response rate of 66.6 percent (329/494).

For purposes of this study, partnerships were deemed successful if, by self report, they achieved any (or all) of the following important health-related outcomes with their community (or target population):

1. improvement in access to healthcare services;
2. improvement in health-related knowledge, attitude, and/or behaviors;
3. improvement in a health-related outcome; or
4. a reduction in health disparities.

These outcomes were selected because they cover the broad scope of potential beneficial results that a medicine-public health partnership might achieve.

Difficulty accessing healthcare services is commonly viewed by both sectors as a major barrier to achieving optimal health status and health-related outcomes. The health-related knowledge, attitudes and behaviors of individuals are often positively correlated with desired health-related outcomes by both sectors. Examples of this typically involve interventions that educate healthcare providers, patients, families, or a combination of populations in acquiring a desired understanding, attitude or behavior related to a specific health issue. This outcome is particularly important to both sectors as their ability to achieve this goal is often linked to resources and sustainability. And finally, the growing evidence of significant differences in the incidence, prevalence, mortality and burden of diseases among population groups has led both sectors to target the elimination of health disparities.

Data Analysis

All data analyses were conducted using the Statistical Analysis Software system (SAS®).[37] Initial analysis included descriptive statistics, such as frequencies, chi-square and correlation statistics, for each of the survey items.

Logistic regression analyses were performed to identify those aspects of a partnership that would predict a successful outcome. The outcome variables referred to whether the partnership was successful in achieving a goal in the four outcome areas. The predictor items were those identified in the literature as being associated with successful partnerships: 1) reason for partnership formation; 2) identification and recruitment of partners; 3) perceptions of barriers to collaborations; and 4) leadership/governance (see Table 2 above). In addition to these five factors, the duration a partnership had been together was included in the analyses as we hypothesized that the longer a

partnership exists, the greater the likelihood that outcomes will be achieved. A total of four logistic regression analyses were run to examine salient predictors of these outcomes.

Results

Table 3 displays the characteristics of the medicine and public health partnerships surveyed as part of the study. Comprising a total sample of 329 partnerships, 46 (of 58) California counties are represented, with 298 local or county level partnerships and the remaining 31 representing statewide partnerships. The majority of the partnerships did not focus their efforts on populations specific to race/ethnicity, age, gender, income, or insurance status, while certain groups such as Latinos, children, low income populations, and under- or uninsured groups, were emphasized periodically. Representatives from city/county health departments, community-based organizations and hospitals were most frequently cited as active partners among all partnerships.

Logistic Regression Models

Health Disparities. As shown in Table 4, none of the variables identified in the literature that are assumed to be related to the success of a partnership were found to predict success in reducing health disparities between populations in the community. However, two variables, 'reason for partnership formation' and 'identification and recruitment of partners' approached significance ($p=.083$ and .094, respectively).

Table 4 here

Change In Knowledge Attitudes And Behavior. As displayed in Table 5, none of the variables hypothesized in the literature were found to increase the likelihood of success in changing

knowledge, attitudes and behaviors of target populations. The only variable that significantly predicted a partnership's success for this outcome was duration (i. e., the length of time a partnership had been together). Partnerships that were together for one year or more were almost five times as likely to be successful in this outcome.

Table 5 here

Improve Access To Healthcare Services. As shown in Table 6, none of the factors identified in the literature were predictive of partnerships' ability to improve access to health care services of target populations. Similar to the knowledge, attitudes and behavior outcome, duration was the only variable that significantly predicted a partnership's success for improving access to healthcare services in the target population. Partnerships that were together for one year or longer were almost three times as likely to be successful in improving access to healthcare services.

Table 6 here

Improve Health-Related Outcomes. As was the case with the other outcomes, none of the factors identified in the literature were predictive of success in improving health-related outcomes of target populations. Again, the only factor that was significant was the length of time a partnership had been together. Partnerships that were together for one year or longer were more than three times as likely to be successful in improving health-related outcomes.

Table 7 here

Discussion

This empirical examination of medicine and public health partnerships identified only one salient factor, duration of the partnership, which was a robust predictor of three of the four outcomes examined. Factors identified in the literature on successful partnerships, including reasons for partnership formation, identification and recruitment of partners, perceptions of barriers to collaboration, and leadership/governance were consistently found not to increase the likelihood of partnership outcome success.

The vast majority of the factors that are identified in the literature as important to the building of successful partnerships are anecdotal in nature. We could find no studies that empirically examined multiple partnerships to identify characteristics that predicted partnership success. This study both attempted to operationalize concepts derived from the literature on partnerships, as well as empirically examine medicine and public health partnerships.

The fact that none of the factors identified in the literature were salient in terms of predicting success in the outcomes, combined with the fact that duration of the partnership was the only factor that predicted partnership success, suggests three possibilities: 1) our operationalization of the concepts derived from the literature was inadequate to capture the essence of the concepts; 2) the factors identified in the literature are not as salient as believed in insuring the success of medicine and public health partnerships; and 3) the longer a partnership can remain intact (i.e., minimally longer than one year), irrespective of the particularities of the formation and structure of the partnership, the greater the probability that the partnership will achieve its desired outcomes.

The first scenario, that our operationalization of the concepts was inadequate to capture their essence, remains a possibility. However, we took great pains both in terms of consulting with

experts on partnerships, as well as comprehensively testing the survey items during field tests. We believe we could not have significantly improved on this particular aspect of the study.

The second scenario, that factors identified in the literature are not as salient as believed, leads to two possibilities. One, given that so little empirical research has been done on the topic, it is possible that what is derived from less controlled studies and observations just does not have a lot to do with what actually predicts partnership success over time. Second, that the concepts derived from the literature are so dynamic in actual partnerships that their presence or absence at a point in time is less important than their expression at different points in time over the course of the partnership's existence. This alternative suggests either that the concepts identified in the literature are salient, or we just don't have a clear idea of the how the variability of their expression over time is related to the achievement of partnership outcomes. It is also possible that the concepts are not as salient as believed, and other less well-known or understood factors are of greater importance in predicting partnership success.

The third scenario, that irrespective of the presence or absence of particular features of partnerships that are deemed important in the literature, the most important factor is the duration of the partnership. This is certainly confirmed in the present study, but it inevitably leads to a chicken and egg conundrum that goes beyond the scope of the data presented here. Namely, that the presence of those factors identified in the literature (e.g., reason for partnership formation, identification and recruitment of partners, perception of barriers to collaboration, and leadership/governance) are essential to partnerships' continued existence, or that partnerships' continued existence is a precondition for those factors to emerge, or that some of the factors are more salient than others at specific points in time, but that they all must be present during some time of the partnership's existence.

Empirical examinations of multiple partnerships focused on similar issues has not occurred to a great extent. It is clear that further study of these phenomena are necessary for us to better understand both the dynamics of partnerships, as well as the necessary preconditions for their success. Our empirical examination of over 300 medicine and public health partnerships in California suggests that much more needs to be done before we can fully understand the role and impact of medicine and public health partnerships.

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Table 1: Types of Organizations Interviewed to Identify the Partnership Population

Sector	Types of Organizations
Medicine	Professional medical organizations, IPAs and medical groups, insurers, purchasers, community clinics, hospitals, health systems, academic medical centers
Public Health	Community-based organizations, volunteer-based organizations, city-county-state health departments, schools of public health, professional public health organizations, foundations

Table 2: Operational Descriptions of Partnership Factors

Factor	Operational Descriptions
Reason for Partnership Formation	Funds became available
	Regulatory requirement
	To create a collaboration between medicine and public health
	A health related problem was identified that led to the development of the partnership
	People with common interests came together
Identification and Recruitment of Partners	Partners known to have participated in similar projects
	Organizer's knowledge of person's shared values and beliefs
	Based on technical expertise and knowledge related to the focus of the partnership
	Formal/systematic approach (stakeholder analysis)
	Partners were known to founders of the partnership
	Broad community outreach
	A need to join resources to address a problem
	Membership dictated by funder or policy
Perception of Barriers to Collaboration	Competition existed among partners during first year of partnership
	Conflict arose among partners during first year of

	partnership
	Initial lack of interest by partners during first year of partnership
	Partners experienced difficulty seeing benefit of partnership during first year of partnership
	Disagreement over leadership or leadership structure during first year of partnership
Leadership/Governance	Effective leadership
	Informal verbal agreements
	Written agreement (e.g., MOU)
	Written contract
	Expectations of partners not made known
	Expectations stated but not formally documented
	Expectations stated and formally documented

Table 3: Characteristics of Medicine and Public Health Partnerships (n=329)	
Characteristic	%
Race/Ethnicity of Target Population	
Spanish/Hispanic	28.88
White	21.88
Black/African American	18.54
Asian	14.59
American Indian	9.73
Pacific Islander	8.21
No specific	68.69
Ages of Target Population	
< 18	25.53
19- 64	0.61
> 65	1.22
Across Categories	45.90
No Specific Age Targeted	26.14
Multiple Categories	0.61
Gender of Target Population	
Male only	0.00
Female only	7.60

Both	92.40
Percent of Target Population Not Born in the US	
0-9.9%	24.90
10-19%	18.47
20-29%	22.49
30-39%	10.44
40-49%	3.61
50-59%	10.04
60-69%	3.21
70-79%	1.61
80-89%	1.61
90-100%	3.61
SES of Target Population	
Low income	40.37
< 200% poverty	30.89
Other	1.22
No Specific SES	50.15
Insurance Profile of Target Population	
Medi-Cal	38.60
Uninsured	38.30
Underinsured	32.83
Medicare	11.25
Commercial	10.94

No specific insurance profile	48.63
Disease/Risk Factor/Health Issue of Partnership	
Maternal Child Adolescent Health (MCAH)	26.44
Chronic Disease and Risk Factors	18.24
Communicable Disease	13.37
Injury Prevention	13.07
Health Services	10.94
Social Issues	3.65
Other Issues	37.39
Active Partnership Partners	
City/County Health Department	88.75
Community-Based Organizations	80.24
Hospital	71.12
Community Clinic	67.17
Medical and Health Practitioners	66.26
Volunteer-Based Organzations	52.28
Health System	34.95
Health Plan	30.70
State Health Department	26.44
Medical Group	25.53
Academic Medical Center	24.62
Professional Medical Organization	21.58

School of Public Health	17.63
Professional Public Health Organization	15.81
Employer	9.12
City/County Government Agencies/Organizations (Non-health Department)	8.51
Schools	6.99
Community Members	6.38
Business Community	5.17
Faith Communities	4.26
State/Federal Government Agencies/Organizations (Non-health Department)	3.34
Other	9.42

Table 4: Predictors of Partnerships that were Successful in Reducing Health Disparities Between Populations in the Community

Factor/Variable	Odds Ratio Estimate	Odds Ratio 95% Confidence Limits		Chi-Square	p-value
Reason For Partnership Formation	1.60	.96	2.67	3.00	0.083
Identification And Recruitment Of Partners	1.49	.91	2.45	2.80	0.094
Perception Of Barriers To Collaboration	1.05	.86	1.27	0.10	0.754
Expectations Were Made Known	.71	.31	1.62	0.83	0.363
Leadership	.87	.26	2.88	0.02	0.885
Duration (< 1 yr. vs. $\geq$ 1 yr.)	1.14	.52	2.48	0.08	0.772

Table 5: Predictors of Partnerships that were Successful for Changing Knowledge Attitudes and Behavior in the Target Population

Factor/Variable	Odds Ratio Estimate	Odds Ratio 95% Confidence Limits		Chi-Square	p-value
Reason For Partnership Formation	1.25	.77	2.03	.79	.375
Identification And Recruitment Of Partners	.78	.49	1.24	1.12	.290
Perception Of Barriers To Collaboration	1.04	.86	1.23	.08	.779
Expectations Were Made Known	1.38	.61	3.12	.58	.445
Leadership	.53	.18	1.58	1.33	.248
Duration (< 1 yr. vs. $\geq$ 1 yr.)	4.91	2.08	11.58	13.17	.0003

Table 6: Predictors of Partnerships that were Successful for Improving Access to Healthcare Services in the Target Population

Factor/Variable	Odds Ratio Estimate	Odds Ratio 95% Confidence Limits		Chi-Square	p-value
Reason For Partnership Formation	1.10	.68	1.77	.15	.698
Identification And Recruitment Of Partners	1.03	.65	1.62	.02	.903
Perception Of Barriers To Collaboration	1.00	.84	1.20	.00	.997
Expectations Were Made Known	.75	.34	1.68	.48	.489
Leadership	.76	.26	2.19	.26	.611
Duration (< 1 yr. vs. $\geq$ 1 yr.)	2.92	1.39	6.14	7.99	.005

Table 7: Predictors of Partnerships that were Successful for Improving Health-Related Outcomes in the Target Population

Factor/Variable	Odds Ratio Estimate	Odds Ratio 95% Confidence Limits		Chi-Square	p-value
Reason For Partnership Formation	1.37	.84	2.24	1.60	.206
Identification And Recruitment Of Partners	.78	.49	1.26	1.04	.308
Perception Of Barriers To Collaboration	.93	.77	1.12	.61	.433
Expectations Were Made Known	.97	.42	2.22	.01	.939
Leadership	.39	.11	1.42	2.04	.153
Duration (< 1 yr. vs. $\geq$ 1 yr.)	3.24	1.37	7.66	7.14	.008