Public Health Collaborations for Chronic Disease Prevention in California

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Abstract

Public health organizations aim to improve community health for all and tend to collaborate to achieve their goals. Research suggests that a high degree of synergy, or how organizations with similar goals collaborate in order to better utilize all their resources, predicts success. This study examines synergy and communication in five collaborations intended to reduce chronic diseases, whether they are meeting their goals by sharing resources, and if ultimately there is an effective collaboration among them. Ninety-six members of the collaborations received online surveys using validated questions on synergy and communication in 2016, which 36% responded. Data from 2016 depicted that staff and partners scored synergy an average of 4.57 and 3.96 and communication 4.21 and 3.94 (out of 5), respectively, indicating overall positive impact with public health collaborations. These partnerships also presented an average score of 4.18 that they are advancing towards their goals and 3.94 that they are receiving the benefits from collaborating. Survey results from 2016 will be compared to pending results from 2017 including a quantitative analysis for both. The results represent how synergy can improve public health collaborations.

Introduction

Public health allows us to become aware of how our lifestyle impacts our health. It can give us an insight on occurring issues like the health disparities that exist when obtaining healthcare access and the risks of chronic diseases. One of the goals of public health is to control the spread of chronic disease. However, how are they able to do this? Numerous organizations have been started to prevent chronic disease and their effectiveness is important to analyze and understand what areas need to improve in their projects and how they can influence other organizations to meet their goals. This is done by researching public health collaborations.

Public Health collaborations have become the backbone for public health organizations to accomplish their goals of improving community health for all. Collaborations are crucial to understand the application of synergy, which is how organizations with similar goals collaborate in order to better utilize all their resources, and how it predicts success.[1] Through collaborating, partners can become aware of how their projects and teamwork can be improved while they are addressing chronic disease prevention.

There are many motives as to why organization and agencies capitalize on collaboration while still serving their own incentives. For example, it can be from gaining visibility, reducing costs and to networking.[2] Unfortunately, there are also occasions where organizations and agencies cannot keep that link between them due to schedule conflicts, distrust among them and the possibility of not achieving anything from parties within the collaboration. Still the sequential hierarchy network of partnership's influences each other. Improvements must be made when it comes towards collaborating and how to achieve their goals.

Public health collaborations that are actively meeting their goals can have far reaching affects. Those that do substantially well are encouraged to target different populations.[2(p2)] These specific organizations should aim to assist low-income communities and can easily accommodate to these new populations while acknowledging different cultures and values. By having shared values and interests, it will lead for more engagement by other partners. Doing so gives public health professionals and public health collaborations an opportunity to provide new perspectives for community health and lead to information about how organizations can perform well. Through the influence of synergy they can provide a better of quality of assistance to their targeted audience.

Synergy as a Foundation

Synergy plays an important role for public health collaborations, because it helps reach the end goals of partnerships and can also be applied when doing general research. For example, research describes how synergy gives insight on how partnerships are functioning.[3] It also leads us to learn more about the unfilled gaps that exist within these collaborations. Research on synergy is not only applicable in the macro-scale multitude of organizations, but also in the

micro-scale of individuals. Synergy can identify potential conflicts, role overload and the significance of how to better manage partnerships such as reaching out to external partners and to have better coordination among partners.

Although it is very common within partnerships that each partner has their own goals and values, they can also work together. How can these different mind-sets cooperate? According to another report, there are many things to consider when trying to understand their differences such as their guiding principles, important goals, key variables and indicators.[4] Overlapping perspectives gives more understanding to the partners and their possible relationship. This information is later used for synergy to arise and allow successful collaborations with the same goals.

Granted, there are other ways in which partnerships can affect synergy. One study found that certain qualifications like community-related challenges, partner involvements challenges, nonfinancial resources, efficiency, administration and management, and leadership intertwine with partnership synergy.[5] Each component alters the level of synergy in partnerships, but effective leadership has a greater impact in these collaborations. For example, a recent study[6] presents the idea that synergy can create different and unique unanticipated projects. It was also noted that negative traits will not affect the level of synergy. However, if these partnerships are formed before considering those traits,[7] there will still be synergy created from these collaborations that will help to understand the negative traits.

Modifications can be made, especially to improve teamwork and communication. For example, synergy provides research programs for hospitals and nurses on how to carry out better methods to improve partnerships. Yet, within these inter-professional collaborations the "universal design" theme was found among them.[8] Synergy identified that professionals bring their strengths and skills together for design processes, but it is vital to realize that further research should be implemented to assist others within their professions to accomplish goals.

State-Level Chronic Disease Prevention

Synergy serves to be a great foundation for collaborations. Since it begins as a process, these collaborations perform well at the state level. They combine the efforts of organizations that exist within the state. These state-level partnerships are found to be affected by economic, political and social conditions.[9] For example, state sponsored partnerships at schools that offered nutrition and physical education had an increase from 2000-2006, but decreased afterwards due to the economic recession of 2008. This led to budget cuts and these collaborations were unproductive. State-level partnerships should be researched to determine how their collaborations will affect their work with schools and to their general target population.

State-level partnerships are sometimes needed immediately to address their goals and offer their service before these collaborations become difficult to maneuver. One study analyzed emerging

infectious diseases that could affect their partnerships.[10] There was a focus on the synergy within state-level and federal-level collaborations. The basis of these partnerships work well but in this case, more work was given to the federal-level partnerships that shifted synergy for collaboration making it less effective. Yet, federal-state partnerships can provide funding to other state-level partnership in other areas and synergy is still formed in other projects. State-level public health collaborations also have limitations. A report[11] that studied Medicaid and public health agencies, revealed that public health agencies did not participate when forming policies and states did not have access to data, thus there is already a lower level of synergy. Besides having these limitations, public health collaborations refer back to synergy to improve their collaborations.

Synergy is an important factor for successful public health collaborations. This study examines changes in synergy and communication among five statewide public health collaborations in California with the aim of preventing chronic diseases. Communication is needed in order to coordinate with other participants in a partnership or collaboration. It is thought that by having such collaborations working together by using synergy and communication, they are more productive and finish their project in a timely manner. The California Department of Public Health is the backbone of the partnerships that were analyzed, because they work with the partnerships to move their projects forward. Data that will be collected in 2017 will be compared to the data collected in 2016. We conducted online surveys that included validated questions on synergy and communication. There will also be a focus on the Stencil Kit project, that is part of one of the partnerships in this study. Specifically, we ask: Have perceptions of synergy and communication changed over time?

Data Collection Methods

The study used online surveys to measure synergy and communication in five collaborations led by staff at the California Department of Public Health (CDPH) that aim to reduce chronic disease prevention. It is a 5-year project funded by the Centers for Disease Control and Prevention known as the Prevention First focusing on the value of partnerships. There are seven partnerships that focus on different topics such as the promotion of high blood pressure in patients, prediabetes and physical education in elementary schools. In Year 3 there were 96 partners and in Year 4 of the project there were 156 partners. Key informant interviews with and quarterly reports by CDPH staff were used to identify external and internal to survey.

An annual online survey of CDPH staff key external and internal partners measured synergy using the eight question Jones Synergy Scale.[1(p40)] The Jones Synergy Scale asked questions such as if collaborations were making progress and working effectively, addressing how partnerships generally feel about the partnerships such as excitement and passion, and if all partners are benefiting from the collaboration itself.[1(p40)] Thus, by having a partnership functioning, synergy is formed because all collaborations are working together.[12] This process eventually sparks partnership effectiveness to occur. Another scale that is used in the study is the

Administration and Management scale,[5(p689)] which includes six questions on communication that aim to find out if there is an overall communication between partners. For example, some questions centered around coordination with partnership activities and coordinating on communication with people and organizations held outside of the partnerships.[5(p689)] Both used a Likert scale from 1-5, where 1 was "strongly disagree" and 5 was "strongly agree." There was also of choice of putting "Don't Know.

Data Analysis Methods

A summary score for collaboration and communication was calculated for each respondent, and an average calculated for each of the five collaborations. Average scores from 2016 and 2017 were compared using t-tests. Qualitative analysis was conducted using responses to open ended questions that asked respondents to report what was going well in the collaboration and what needed improvement.

Results

The Centers for Disease Control and Prevention (CDC) is funding the Prevention First project to engage in seven strategies and each funded state works around these strategies. Strategies 1-3 focus more on problems that exist within the public health pipeline and strategies 4-7 center around healthcare systems. Strategy 3 which promotes the adoption of physical activity occurs in two locations that are in early care and education and worksites: the Bike Share Project and the Stencil Kits project. In this portion of the paper we will focus on one of these projects which is the Stencil Kits project. Although the California Department of Public Health is asked to engage in these strategies, it needs alliances to distribute stencil kits for playgrounds at childcare centers throughout the state. Specifically, the stencil kits are released to counties throughout California, to be used in a play-based environment with the intention of to increase children's level on physical activity. This way, children may increase their balance and manipulative skills and their muscular endurance and flexibility.[13] The partners participating in this strategy are located in all 58 counties across California. The majority are county Offices of Education, which have longstanding relationships with licensed day care providers. These local partners allow the state health department to build on established local relationships to reach a new audience with a proven program.

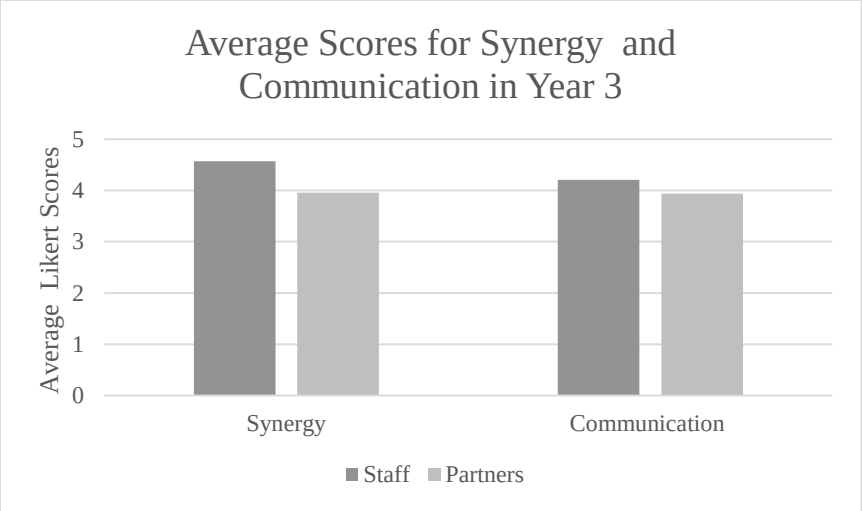

Figure 1. Average scores for synergy and communication were calculated on the Likert Scale for Year 3 of the Prevention First project. The "staff" are the partners that work directly with the California Department of Public Health (CDPH).

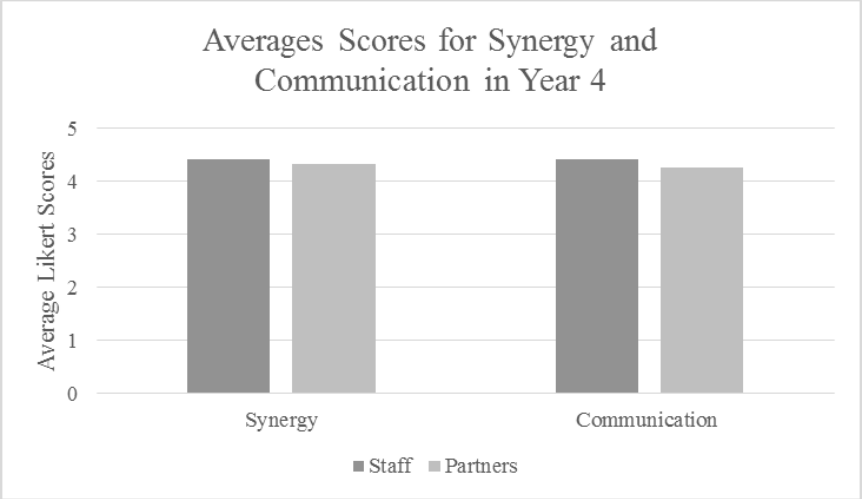

Figure 2. Average Scores for synergy and communication were calculated on the Likert Scale for Year 4 of the project.

We calculated the average synergy scores for all seven strategies. In Figures 1 and 2 above we notice that synergy for staff which are those public health professionals that work directly with the CDPH decreased in synergy from 4.57 to 4.42 in Year 4 of the project. For external partners, the average score of synergy increased from 3.96 to 4.32. Communication for staff increased from 4.21 to 4.42 in Year 4 of the project. For external partners, the communication score improved from Year 3 to Year 4 of the project as well: 3.94 to 4.27. In Figure 3 below we can also notice the improvements of synergy and communication among partners for the Stencil Kits project between Year 3 and Year 4. The average score of synergy increased from 4 in Year 3 to 4.2 in Year 4. The average score of communication was 4.2 which remained the same among the partners between Year 3 and Year 4. For all partnerships, a two-

sample t-test was used to calculate the averages as depicted in Figure 4. There was a significant difference from Year 3 and Year 4 for synergy with a p-value of .015305, however there was none for communication with a p-value of .096279. There was no significant difference regarding communication scores for the Stencil Kit project as p-values were .050199 for synergy and 0.952702 for communication found in Figure 3.

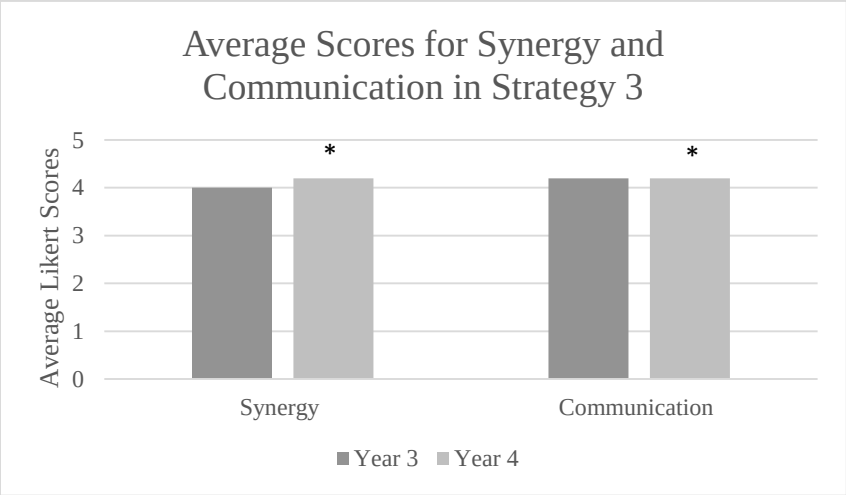

Figure 3. Average scores for synergy and communication in the Stencil Kit project from Year 3 to Year 4 of the Prevention First project. By using a two-sample t-test, there was no significant difference in scores for synergy nor for communication. The p-values were: $p \leq 0.050199$ and $p \leq 0.952702$, respectively.

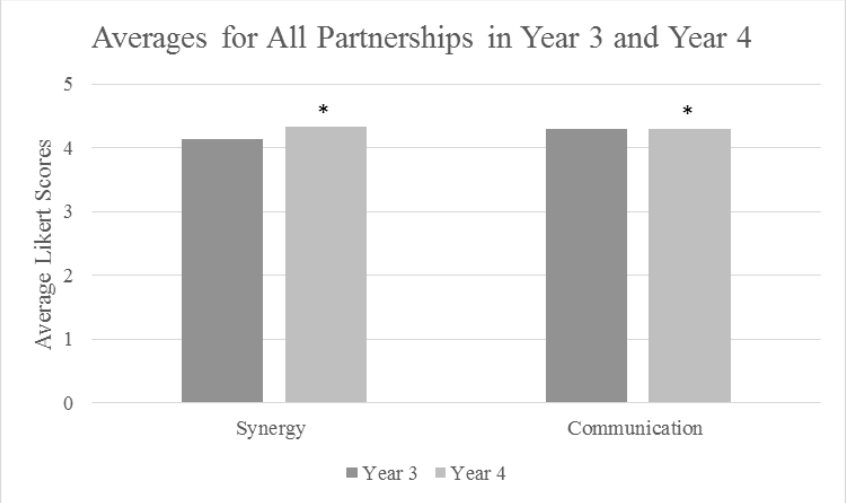

Figure 4. Average Scores for synergy and communication were calculated for all partnerships from Year 3 and Year 4. By using a two-sample t-test, there was a significant difference in for synergy but not for communication. The p-values were: $p \leq 0.015305$ and $p \leq 0.096279$.

Discussion

It was noted that communication increased for staff and partners from Year 3 to Year 4 of the project, indicating there was no significant difference. However, the synergy score for staff and partners differed. Synergy score for staff decreased, but the score for external partners improved. This indicated as a limitation of the study. In general, there was a low response rate to the surveys: 36% in Year 3 and 31% in year 4, signifying that respondents were a unique group who did not represent all partners which contributed to a non-response bias. Yet, the respondents seemed overall satisfied with such collaborations. Partners answered the question "The collaboration is making progress towards its' goals" with a synergy score of 4.18 in Year 3 to 4.38 in Year 4. These online surveys also contained open-ended questions.

Open ended questions such as if there were any challenges/barriers coordinating with partners to which 90% of the partners discussed having no challenges. They also mentioned recommendations to improve these partnerships such as having more interactions among partners and to have more consistent reporting. Open-ended comments included confirmation that these collaborations were both beneficial and on the right track to meet their goals. Respondents described the collaborations as "wonderful" and are considered to be an "effective project." Other respondents suggested improvements for their collaborative works such as to "encourage partners more to invite possible collaborators or interested people/organizations that can contribute" and that the "CDPH lacks coordination and proper outreach to potential partners regarding many programs including this one." These recommendations are achievable through course corrections, and can be addressed with minor changes by 1305 Basic leads, which is the official name of the CDC project.

The Stencil Kits project from Strategy 3 depicted similar results as well. The distribution of stencil kits to elementary schools had 60 kits released with 125 pieces including numbers and shapes that had the potential to reach to 30K children in California. These kits allowed children to participate in many activities such as playing bull's eye and doing hopscotch. For example, when children partake in hopscotch they practice their balancing, jumping and tossing.[13(p9)] This activity also offers children to enhance their letter and number recognition. The Stencil Kit project was also implemented in a study to prevent obesity in preschools.

The Glenn County Office of Education partnered with CSU Chico and the Center for Nutrition and Promotion (CNAP) to utilize the stencil kits and to improve children's physical activity especially in low income preschoolers. The kits were used in two preschools in designated areas of the preschool playgrounds. It was reported that the stencil kits proved to be an economical way for children to become active, had no safety restrictions and increased energy expenditure for the preschoolers.[14] With these results we can refer back to the concept of collaborations of local partners with public health organizations allow the state health department to build on established local relationships to reach a new audience with a proven program. By

having a stencil kit intervention, this led to their success in increasing children's physical activity that becomes a method to prevent childhood obesity especially for children of low income communities.

As mentioned before, synergy increased from a score of 4 in Year 3 to 4.2 in Year 4 while the average score of communication remained 4.2 between those two years. The communication scores had no significant difference. Another limitation is that in Year 3 there was a 45% response rate while in Year 4 the rate decreased to 27%. Followed by a close analysis of respondents shows that respondents were representative of the entire group of partners with regard to agency type and location (rural vs. urban counties). Therefore, we conclude that the results likely reflect the perceptions of all partners. All respondents from the Stencil Kits project reported having no challenges within their collaborations. They did recommend on having more rules and guidelines on the Stencil Kits projects themselves and to check up regularly on the projects. These comments are useful for the stencil kits partnerships to improve. Synergy and communication have proven to be useful in identifying how partnerships and collaborations are working towards providing community health for all.

Conclusion

Both synergy and communication indicate an overall positive impact with public health collaborations through the surveys that were constructed. By examining survey responses and response rate it was concluded that external partners and staff who work directly with the California Department of Public Health were satisfied with their partnerships. These results ultimately represent how synergy can improve public health collaborations for chronic disease prevention in California. There will be further analysis of synergy and communication in the future regarding the stencil kits projects to see if what was discovered within the collaboration of CSU Chico, Center for Nutrition and Promotion with the Glenn County office of Education, is found in larger preschool settings throughout California.

Acknowledgements

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