A Review of the Literature on the Links Between Health Promotion Capacity Building and Health Outcomes

Submitted to:

OHPRS Evaluation and Needs Assessment Committee
Ontario Health Promotion Resource System

Submitted by:
Tina Sahay
Health Promotion Consulting Group

December 27, 2004

Table of Contents

I. Background

In April of 2004, the Ontario Health Promotion Resource System (OHPRS) issued a request for proposals to review the literature on the link between health promotion capacity building and positive health outcomes. The request emerged from an evaluation of OHPRS services and supports, undertaken during April 2001-March 2003, which recommended that "the OHPRS continue to monitor and synthesize into key messages, the larger international research literature providing evidence of an association between capacity building for health promotion, the successful implementation of health promotion programs and policies, and positive health outcomes" (OHPRS Impact Evaluation Committee, 2003 Summary Evaluation Report for the Ontario Health Promotion Resource System, p.16).

The purpose of this literature review was to document the relationship between efforts to build health promotion capacity (provided by OHPRS members[1]), enhanced quality of health promotion programs and services, and positive health outcomes at the individual and community level. From the review, a set of recommendations were to be developed to guide future work of the OHPRS in making the link between health promotion capacity and improved health status.

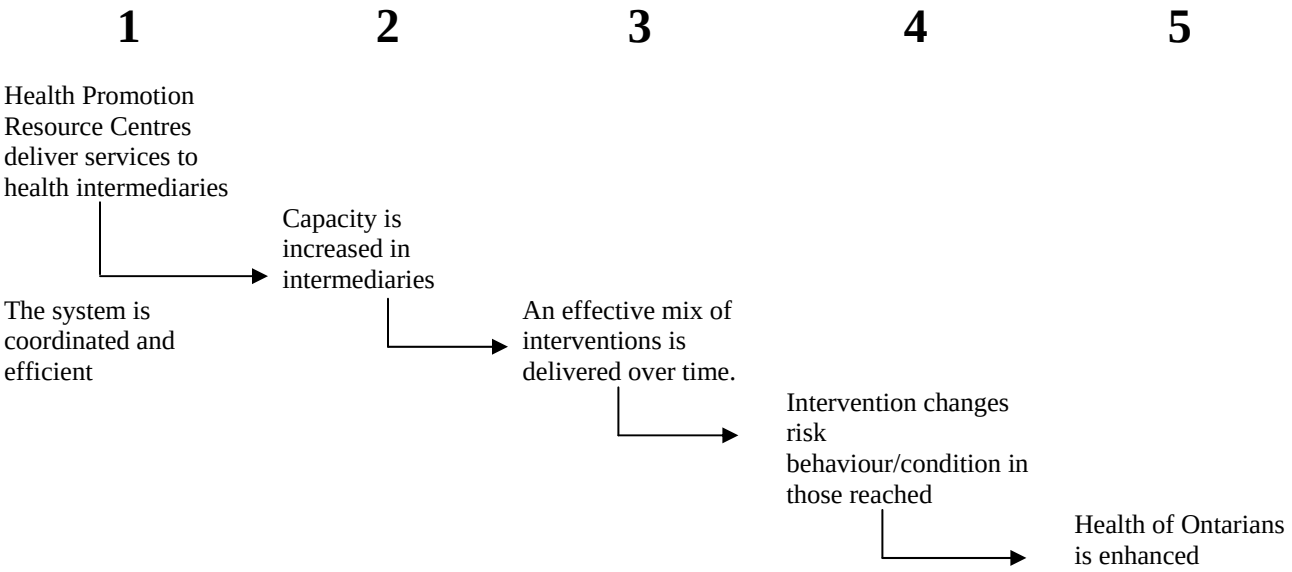
OHPRS Framework

The Ontario Health Promotion Resource System has proposed an evaluation framework depicting the relationships between health promotion capacity and enhanced health outcomes (see figure 1). The framework depicts the relationship between the set of services provided by the OHPRS to increase capacity among health promoters which

[1] The Ontario Health Promotion Resource System supports the development of health promotion capacity in Ontario. Funded by the Ontario Ministry of Health and Long-Term Care, the twenty-two member organizations of OHPRS provide services to people and organizations promoting health in Ontario communities to support them in the development, implementation and evaluation of health promotion activities. Services provided by OHPRS members include training, consultation, print and electronic resource development, network building, community organizing training, and referrals. Through their work, the OHPRS supports the direction of the provincial government for promoting the health of Ontarians by empowering local communities to identify health issues and to develop local solutions.

enhances the quality of health promotion programs and services and ultimately improves health outcomes at individual and community levels.

Figure 1. **OHPRS Framework**



II. Methods

To demonstrate the validity of the links in the OHPRS framework, a search was conducted of select electronic databases (Medline, CINAHL, CANCERLIT) using key words such as “health promotion”, “capacity”, “health outcomes”, and, “health status”. Following this search, key informant interviews with eight international leaders in the field of capacity building research were conducted to identify additional unpublished or published documents. Several articles were found demonstrating links, or partial links, among the intermediary levels of the OHPRS framework. There were also two studies found that provide evidence in support of the complete framework. The database search showed, and the interviews confirmed, however, that there are no studies that have deliberately followed the framework all the way from capacity building (level 1) to health outcomes (level 5).

Given this finding, it was decided, in consultation with the OHPRS, to search for studies which discussed capacity building alone. Because the collection of studies for this review was not meant to be exhaustive but, rather, was intended to identify relevant work which could provide evidence in support of the relationships depicted in the OHPRS causal framework, studies were selected which were well-designed and which provided the best examples of the evidence sought.

III. Findings

Studies which provide evidence to support the links in the OHPRS framework are reviewed below. Because many of these studies were undertaken prior to the introduction of "capacity building" as a field of study, they may not refer to capacity building per se, but rather talk about distinct components which are now believed to be part of the concept of capacity. By way of introduction to the findings, a brief overview of capacity building and its components is provided below. (For a full review of capacity building and its components please refer to *Sahay, TB. An Investigation of Health Promotion Capacity Building. Health Promotion Consulting Group, July 2004*).

A. Overview of the Components of Capacity Building

With the publication of the 1997 article, *Multiplying Health Gains: the critical role of capacity-building within health promotion programs* (Hawe, Noort, King & Jordens, 1997) capacity building became a focus within the health promotion field. Previously researchers had used the term for a variety of interventions, but following the publication of this article, there was a concerted effort to define capacity, distinguish its components and develop strategies to achieve it. The health promotion literature describes capacity building occurring on four levels: individual, organizational, community and system. Capacity building is consistently defined as a process that enhances the ability of an individual, organization, community or health system to develop, implement and sustain health promotion initiatives and ultimately health changes over the long term (MacClean, 2001; Joffres, Health, Farquharson, Barkhouse, Hood, et al., 2004; Hawe, Noort, King &

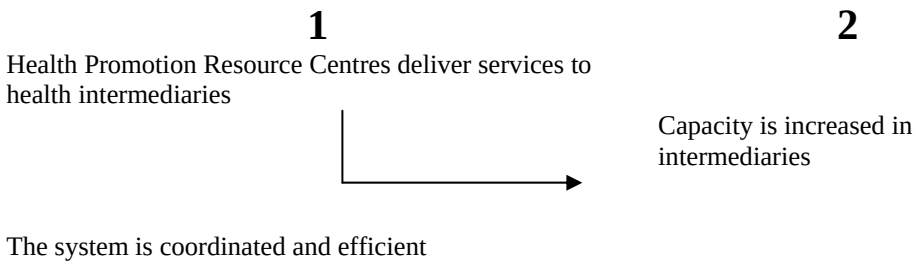
Jordens, 1997; Gibbon, Labonte & Laverack., 2002; NSW Health, 2001). This ability is enhanced by increasing the assets and attributes which an organization, community or system is able to draw upon; the assets and attributes being primarily skills, infrastructure, resources and commitment.

Research conducted worldwide over the past seven years has contributed to an even greater understanding of the key components which make up individual, organizational and community capacity. Although several independent bodies of work are noteworthy, one model, the New South Wales Health model of capacity building, is presented here because it is the most comprehensive and was developed through extensive research and field testing. The model was created to guide the development of effective capacity building practice within health promotion. In this model the intervener works with individuals, organizations and communities on five key components to build their capacity to deliver health promotion programs and services. The five key components of capacity building are: organizational development; workforce development; resource allocation; partnerships and leadership. By working on these five components of capacity, the intervener builds the individual, organization and community's infrastructure, program sustainability and problem solving ability (NSW Health, 2001).

B. Review of Literature Collected

This review includes studies found within the health promotion literature which were considered to be good examples (i.e. rigorous studies and relevant for the review) to support the relationships in the OHPRS framework. The studies reviewed examined the strategies which work best to enhance the components of capacity (levels 1-2). Other studies investigated the impact of enhancing these components on the delivery of effective interventions (level 3), health behaviour and environmental conditions (level 4) and health outcomes (level 5). The literature is presented by link in the causal framework.

i. Activities found to increase health promotion capacity



Capacity for undertaking health promotion activities involves the strengthening of multiple components: organizational development; workforce development; resource allocation; partnerships and leadership. Two of the best examples of initiatives aimed at improving these components can be found within the Canadian Heart Health Initiative (CHHI) projects. The CHHI, launched in 1986, brought together senior public health leaders and researchers in nine Canadian provinces to develop a national public health service system for the prevention of cardiovascular disease. The initiative is characterized by prolonged engagement with communities and organizations as a recipe for success (O'Loughlin, 2001). All nine projects have capacity building strategies, in this instance, to support dissemination of health promotion interventions. Capacity building activities undertaken in Nova Scotia and Saskatchewan as part of the CHHI initiative were explicitly aimed at two components of capacity building, organizational development and partnerships. The strategies involved can also be interpreted as targeting a third component, workforce development. The strategies have been evaluated and are discussed below.

Heart Health Nova Scotia - 1996-2001 (MacLean, 2001; Joffres, Heath, Farquharson, Barkhouse, et al., 2004) implemented activities to build organizational capacity for health promotion and chronic disease prevention to occur in the Western Health Region of Nova Scotia. To develop the activities, research was conducted among a partnership consisting of 20 provincial and regional organizations whose mandate was to facilitate heart health promotion. The goal of the research was to assess existing capacity among the

partnership organizations and to identify challenges to building capacity. Both qualitative and quantitative data was gathered. Results showed that many informants believed in the importance of partnership as an important facilitator to heart health promotion. Partnerships, it was believed, helped to foster a shared vision, helped to create a synergistic environment, and could enhance organizational effectiveness through resource and time maximization and reduction of duplication of programs. Partnerships were also thought to foster knowledge and skill transfers among organizations. The research also identified a number of challenges to heart health promotion experienced by partner organizations including: insufficient funding, inadequate knowledge and skill base among staff and volunteers; lack of time and competing work priorities; resistance from volunteers who have other interests; and, a political climate which may or may not emphasize health promotion.

Using the research findings as a basis for development, the Heart Health partnership developed a comprehensive strategy for heart health promotion which relied upon two components of capacity building: (1) partnership development (to provide organizational members with opportunities for networking, sharing knowledge and skills, and exchanging learning); and, (2) organizational development including: technical support via training opportunities, action research to track capacity building efforts, community activation that build on knowledge and skills acquired at workshops, consultation processes whereby partners developed heart health action plans that build on the strengths and addressed the weaknesses of their organizations through structural changes and policies. Both the partnership and organizational development intervention strategies were evaluated to determine if these activities were effective for building capacity for health promotion within organizations. Quantitative data included number and type of partnerships, learning opportunities, community activation initiatives, and organizational changes. Qualitative data included information on the effectiveness of partnerships, organizational consultation, and organizational changes.

The evaluation found that activities used to improve partnering and organizational development were a major benefit to building heart health promotion capacity.

Intermediate outcomes included a growing number of partnerships and the development of organizational environments supportive of heart health promotion (i.e. organizational change). For example, capacity building efforts resulted in the development of 204 intersectoral partnerships, creation of a health promotion clearinghouse, implementation of 18 health promotion initiatives and policy changes to support organizational changes for heart health promotion. Forty-seven workshops attended by 1400 participants were reported to facilitate gains in: advocacy, team building, group facilitation, health promotion principles, etc. While long-term outcomes were not purposefully measured, the researchers suggest that the capacity building efforts will likely result in sufficient leadership and capacity within the community to develop comprehensive heart health programs and subsequent improved heart health within the population.

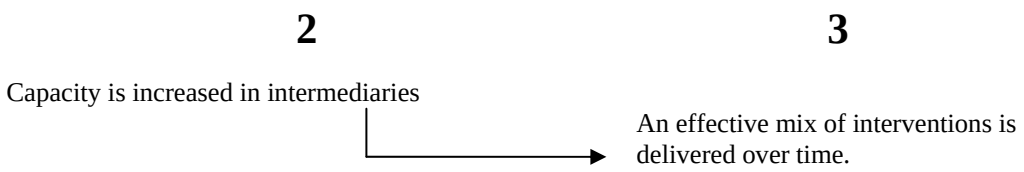
The Saskatchewan Heart Health Program (SHHP) - 1998-2003 (Ebbesen, Woodard, McLean, Buther-Jones, Green, et al., 2001) undertook a five-year research and intervention initiative to help health districts increase capacity to plan, implement and evaluate health promotion activities, and to improve understanding of the capacity building process. Although the article does not break down the strategies into components of capacity building, they can be interpreted as addressing two components, organizational development and workforce development. Within the organizational development component, the SHHP used consultation and peer networking, including innovative forms of consultation such as sharing success stories via group sessions and e-mail. Workforce development efforts included Think Tanks, health promotion summer schools, and satellite telecasts.

Evaluation of the SHHP program found improvements at the individual level in health promoter knowledge primarily in health promotion theory, strategies and understanding of specific tools. Over half of the respondents indicated a moderate amount of skill improvement, most frequently in collaborating, planning and facilitating. No change was found in resource access or utilization (including financial, human, personal, technological and collegial). Management support and conflicting responsibilities emerged as an important influence on individual practice. Challenges to practice

remained consistent and included a lack of time, a supportive environment, and financial resources. At the district level, just under half reported an increase in overall health promotion capacity and a third indicated no change. One quarter of districts reported an increase in funding devoted to health promotion while the majority remained unchanged. Factors hindering health promotion capacity remained consistent and included financial and human resources, and changing staff and management. The SHHP project demonstrates that the strategies were effective in building capacity in the workforce and organization, primarily at the individual level.

Evaluation of the capacity building components of Heart Health projects in other Canadian provinces are currently underway. Alberta (1999-2004), for example, set out to explore the mechanisms and impact of organizational capacity building within all of its regional health authorities. Through training and education the project hoped to create learning organizations (defined as those skilled at creating, acquiring, and transferring health promotion knowledge and implementing actions to promote health). Content of educational/training opportunities include health promotion theory, planning and evaluation, facilitation skill development, intersectoral collaboration, leadership skills and organizational learning (O'Loughlin, 2001). In the Newfoundland study, which focuses on partnership development (1998-2003), six Regional Heart Health Coalitions function as the primary channels for the dissemination of innovations identified during earlier demonstration projects. Strategies of knowledge, skill development and the enhancement of information infrastructure are used to build the capacity of volunteers, community health professionals and regional coalition participants. The project focuses on a) documenting the evolution of these coalitions and b) examining how leadership, coalition composition, capacity and evaluation influence the stability and effectiveness of these partnerships in disseminating heart health promotion (O'Loughlin, 2001). Evaluation results from these initiatives will be instructive to OHPRS and should be monitored.

ii. Increased capacity and enhanced programs and services



This section will examine the components of capacity that have been studied and found to lead to effective intervention delivery. One excellent example of this link is found among the Canadian Heart Health Initiative projects. As mentioned earlier, all projects within the CHHI have capacity building strategies. Of particular interest is the work undertaken in Ontario during 1994-1997.

In 1994, 1996 and 1997, a quantitative study was undertaken to explain the levels of implementation of heart health promotion activities observed in Ontario public health agencies. All 42 public health units in Ontario were surveyed in order to measure internal organizational (including organizational level predisposition – i.e. motivation, and organizational capacity – i.e. financial and human resources, leadership for heart health) and external system factors (i.e. partnerships), that influence implementation of community-based heart health promotion activities. Comparable data were collected for all health units to allow for comparison over three time periods. The first stage of the survey measured levels of implementation over a one year period. The 1994 stage of the survey measured organizational capacity and predisposition for heart health promotion, as well as internal organizational and external system factors. The surveys were repeated in 1996 and 1998.

Path analysis was used to examine the factors influencing levels of implementation reported[2]. The analysis supported a strong and direct relationship between capacity and implementation. The findings indicate that external system and internal organizational factors impact on heart health promotion implementation primarily by influencing

[2] Path analysis is a statistical method that builds on multiple regression techniques and is often used with exploratory models. It was used to estimate the direct and indirect effects of external system factors, internal organizational factors, predisposition and capacity on levels of implementation.

organizational practices to support heart health promotion (i.e. capacity). Of the external system factors, partnerships with other agencies and support from resource organizations were most strongly related to the effectiveness of organizational practices. Of the internal organizational factors, organization structure (measured by coordination of programs) was shown to have the strongest relationship to capacity. However, the authors point out that because only one dimension of organization structure was measured (i.e. coordination) other indicators of organizational structure are needed to strengthen this conclusion. The research also found a direct influence of internal organizational factors, i.e. priority given to heart health and a shared commitment to the priority, on heart health promotion implementation. The findings on whether predisposition influences implementation were inconclusive.

While the researchers assert that the findings cannot establish a causal relationship between the factors examined and heart health implementation, they do believe that the findings help to clarify the links among multiple factors which influence levels of implementation among public health units, namely partnerships, coordination and commitment. Because the research examined only a limited number of relationships, however, further study is needed to examine the influence of multiple other factors on implementation, such as leadership and financial and human resources.

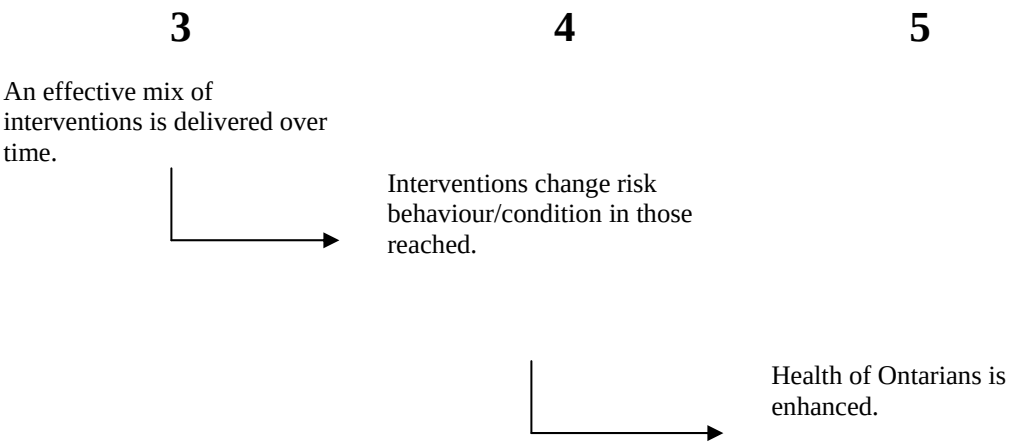
Another good example of the link between capacity and effective intervention delivery is found in the Stanford Five-City Project (FCP), a nine-year field trial to reduce cardiovascular disease risk factors in the population, primarily through health education (Jackson, Fortmann, Flora, Melton, Snider, et al., 1994; Farquhar, Stephen, Fortmann, Maccoby, Haskell, et al., 1985). The project was implemented intensively for six years in five selected communities in Stanford, California from 1980 to 1985 by a research team affiliated with the university. An intervention maintenance strategy was developed at the outset to allow the program to continue beyond the initial six year period. The maintenance strategy, led by the research team, was implemented during 1986-1989 but encountered a number of difficulties, largely due, it was thought, to diminished

community ownership of the program. By 1988 the maintenance strategy, and thus the program interventions, had largely dissolved.

In 1989, a capacity-building strategy was planned and implemented to revive the FCP. It was believed that to maintain heart disease prevention activity in the communities, local health educators and other health promotion providers needed to develop the knowledge and skills which had previously been the domain of the research team. The program was implemented over 2 years from January 1989 to December 1990. Strategies used to build capacity included training of trainers, information exchange among peers, community responsibility and identification of objectives, and technical assistance. The strategies used in this capacity building program can be interpreted to address three components of capacity: workforce development, resource allocation and partnerships.

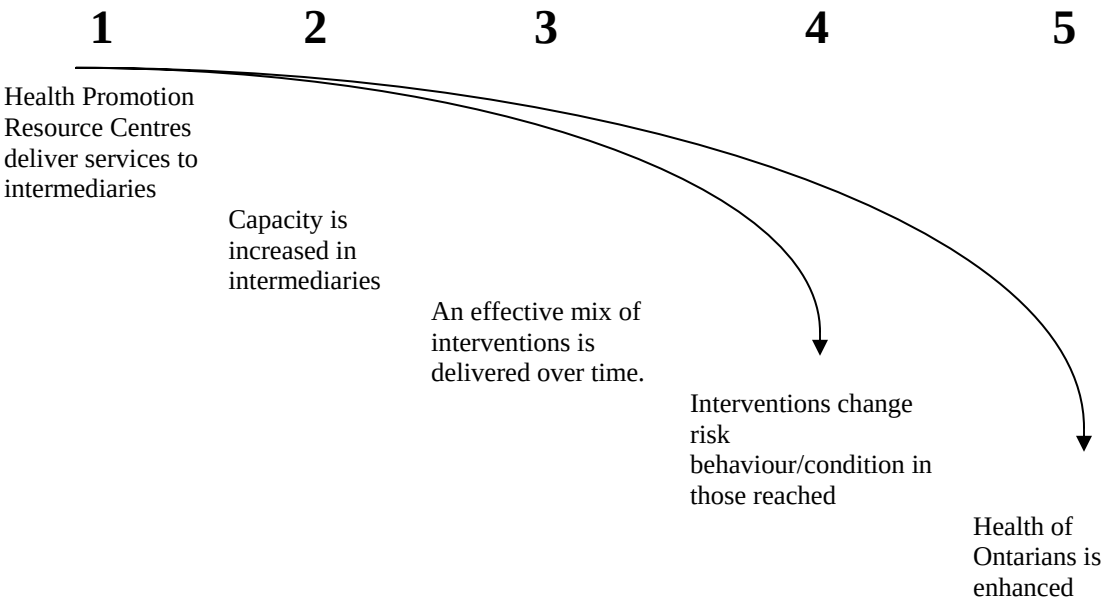
Unfortunately, a number of issues precluded the researchers from developing an outcome evaluation that would yield an estimate of the contribution of the capacity-building program to the success of the FCP. In addition, published evaluations reporting on health outcomes in the FCP diminished after 1988, following dissolution of the initial maintenance strategy. What was found, however, was some subjective assessment of the workforce development component of the program among health educators that imply that the program improved their capacity to conduct program planning, design program evaluation, develop health education materials and strategies, and organize the community for health promotion. Follow-up of health educators after the capacity-building program showed that: participants had been successful in competing for external funding for programs; they had obtained grant support for community projects targeting nutrition education for low literate Hispanics; and, they had developed a Hispanic version of the CDC's Behavioural Risk Factor Suvey. These and other health promotion activities indicate that the health educators who participated in the capacity-building program were functioning at a very high level. Although the contribution of the capacity-building program was not deliberately measured, all involved in the program believe that the capacity-building activities allowed cardiovascular disease prevention to be maintained after the initial six-year phase of the Five-City Project.

iii. Enhanced programs and services and positive health outcomes



There is a wealth of evidence in the literature to demonstrate that modifying behaviours and environmental conditions through effective and efficient public health intervention reduces the burden of mortality and morbidity in populations. Support for the relationship between effective intervention (level 3), changes in health behaviour and environmental conditions (level 4), and improved health (level 5) is particularly strong in the lifestyle area. For example, since the 1960s, efforts to reduce smoking rates through enhanced programs and services in the US have resulted in less tobacco use in the population, and substantial declines in heart disease and stroke mortality overall (US Surgeon General, 1989). A large number of studies in the nutrition arena have provided evidence that if an effective mix of educational, media and policy intervention is delivered over time, changes in dietary behaviour and food environments, and thus improved nutritional health status can be realized (Ciliska, Miles, O'Brien, Turl, Tomasik, et al., 1999; Contento, 1995; Sahay, Rootman & Ashbury, 2000). The strength and abundance of research demonstrating the relationship between health promotion interventions and health outcomes contributed to the establishment of numerous centres of systematic review which have sprung up worldwide to provide program developers with syntheses of well-evaluated interventions found to have health benefit.

iv. Link between capacity and health outcomes



While the causal pathway can, and has, been inferred from the above discussion, direct evidence to support the link between capacity building among health promoters and positive health outcomes is difficult. As we have seen in the aforementioned examples, there is some evidence to support the various links along the OHPRS framework. No literature was found, however, which deliberately studied and/or documented the link between health promotion capacity and health outcomes.

One of the foundation studies for community intervention, the North Karelia project, as well as the Community Trials project, both used strategies of community mobilization to enhance the five components of capacity building, and undertook long term studies to evaluate health outcomes. Both of these projects indicate a causal relationship between capacity building and health outcomes. These studies, however, are not perfect examples of capacity building leading to health outcomes because they did not set out to study capacity building in itself and, the capacity building components were just one element of a much larger program. Still, both studies provide some evidence in support of the links in the causal pathway.

The North Karelia project was launched in 1972 in response to exceptionally high cardiovascular disease mortality rates in Finland. The project aimed to reduce levels of the main risk factors, smoking, cholesterol, blood pressure, and aimed to promote secondary prevention through general lifestyle changes, particularly dietary habits and smoking. One major intervention of the North Karelia project, which focused on the leadership component of capacity building, was the establishment of opinion leaders in the community. Based on the innovation-diffusion theory, the project sought to utilize lay opinion leaders to promote and diffuse its desired health innovations – in this case, lifestyle changes, throughout the community. By using normal community networks and interpersonal contacts to help form and change people's attitudes and to promote behavioural change, it was believed that the messages would be more effectively taken up, adopted and acted upon. By the end of four years of project implementation, over 800 lay opinion leaders had been trained in the North Karelia project. Although the literature does not deal with it extensively, there is an element of another component of capacity, partnership building, between the lay workers and the local health centres, which appointed public health nurses to serve as contact persons.

This extensive leadership combined with partnership development represents a significant effort to strengthen two of the five components of health promotion capacity and indicates that there is a relationship between the researchers' intervention and the increased capacity of the community members (steps 1 to 2 of the OHPRS framework). The links between steps 2 and 3 of the OHPRS framework are indicated by the finding that 59% of the opinion leaders said that, following training, they had discussed behavioural or risk factors with people outside of their household using their own examples, practical advice and referral to project staff. Evaluation of lay leaders was done through self-reports and showed an impact on smoking cessation, policy changes, and dietary modification (steps 3 to 4). The links between health behaviour/environmental changes (step 4) and health outcomes are well documented in the North Karelia literature. The first 10 years of the project (1972-1982) showed a 28% reduction in smoking (Puska, Koskela, McAlister, Mayranen, Smolander, et al., 1986).

By 25 years cardiovascular disease among men had declined by 73%; the reduction has been of the same magnitude among women (Puska, 2002).

There are some methodological limitations with drawing a direct link between the contribution of these two capacity building components and the health outcomes achieved. First, self-reports have a tendency to be subjective and do not always provide an objective evaluation of opinion leaders' impact. Second, assessing the direct effects of lay leader activities is difficult since this intervention was only one part of a comprehensive project. It is therefore impossible to isolate the contribution of lay leaders to the outcomes reported. However, the North Karelia research team believes that the lay leader activity was a useful part of the project intervention and contributed to the astounding achievements of the North Karelia project (Puska, Koskela, McAlister, Mayranen, Smolander, et al., 1986). It is conceivable that the lay leaders did, in many ways support other project activities in their communities, and through their example and activities, promoted the project objectives. In spite of the limitations, North Karelia does provide an example of a comprehensive study that indicates a link between capacity building, interventions, and improved health outcomes.

The Community Trials project (Holder, Saltz, Grube, Voas, et al., 1997; Treno & Holder, 1997) undertaken in the United States is a good example of how the strengthening of three components of capacity building contributed to environmental changes that improved health outcomes by reducing alcohol-involved trauma. The project, conducted from 1991-1996 in California, consisted of multiple elements, one of which, community mobilization, can be viewed as containing three components of capacity building: workforce development, resource allocation and partnerships. Workforce development and resource allocation were achieved through the hiring of local community members who received training and resources from the research team. Partnerships were developed with other community organizations to form coalitions, whose members were then trained to form task forces to further develop each of the intervention components. The coalitions and local project staff worked to increase awareness in the community while the task forces increased key leaders' support for the environmental changes. By

having increased capacity among community members through these interventions, the researchers achieved steps 1 to 2 of the OHPRS framework.

The mobilization model was implemented in three pairs of experimental and comparison communities to test its robustness, primarily evidenced by policy implementation. The project evaluation established the link between steps 2 to 3 evidenced by the development and implementation of specific policies in the project's target communities. Evidence of policy implementation was indicated, for example, by a) police chief established priority; b) increased drinking-under-the-influence enforcement; c) increased arrests for driving under the influence; d) introduction and use of breathalyzers, etc. In addition, as a result of community training in techniques for working with local news media, there was a statistically significant increase in coverage of alcohol issues in local newspapers and on TV in the experimental communities over their matched comparison communities. Preliminary findings of the project imply links between steps 3, 4 and 5 of the OHPRS framework. Policy implementation which led to changes in risk conditions (step 4) was indicated by the significant reduction in alcohol sales to minors and the increased adoption of responsible alcohol serving polices. The impact on health outcomes was indicated by a reduction in alcohol-involved traffic crashes by 10% annually (Holder, Saltz, Grube, Treno, et al., 1997).

As with the North Karelia project, the Community Trials project implies that there is a relationship between capacity building and health outcomes. However, as well as the community mobilization strategy that contained capacity building components, there were four other strategies that were involved in the project. The specific contribution of capacity building elements cannot be assessed, therefore, because the Community Trials research team did not set out to deliberately study the impact of capacity building on health outcomes.

IV. Discussion

Empirical evidence supporting the link between health promotion capacity (and its related components) and health outcomes remains in its infancy. The effectiveness of strategies to build capacity among health promoters to undertake health promotion has been explored in the health promotion literature (steps 1-2 of the OHPRS framework). A number of the Canadian Heart Health demonstration projects, for example, found that peer consultation, technical skill building and community activation training were effective strategies for improving workforce development, organizational development and partnerships. There is much need, however, for additional investigation into the multitude of strategies which may enhance these and other components which comprise health promotion capacity.

The relationship between health promoter capacity and effective health promotion interventions has received some attention in the literature (steps 2-3). However, while there is empirical support for the relationship between some components of capacity (focused on workforce development, internal organizational processes and partnerships) and effective intervention, there is little in the literature which examines the relationship between the many other components of capacity and effective intervention. There is empirical support for the relationship between effective health promotion interventions (step 3) and health outcomes (step 5). Numerous studies, for example, have shown significant improvements in lifestyle areas due to public health intervention.

Identifying evidence to support the links within the OHPRS framework remains a challenge for the capacity building field. Evidence of how and whether capacity building contributes to health outcomes requires dedicated exploration. Very few studies were found which measured changes in health promotion capacity as a result of interventions like the OHPRS delivers, and no long-term studies which follow through with measures of changes in capacity, resultant effective health promotion programs, and subsequent improvements in health status. Studies included in this review did provide some insight into the causal pathway. However, even with these studies it cannot be assessed with

certainty the overall contribution of the capacity building activities to the final health outcomes.

This review has demonstrated that improvements in health status are difficult to attribute directly to any particular capacity building activity because there will almost certainly be other factors which contribute to individual and community health status. A study which could provide direct evidence to support the link between capacity building among health promoters and positive health outcomes, though possible, presents numerous methodological challenges.

In the randomized controlled trial, for example, absolute conclusions about causal attribution can only be drawn if three conditions are met. First, the control group would have to be adequately matched to the one experiencing the intervention. Second, the control group would have to have no capacity building or health promotion intervention of its own. And finally, the external forces on the control and experimental groups would have to be very similar (Baum, 1998, p.81). The nature of community-based health promotion work makes it difficult to meet these conditions, especially since health promotion work is largely about the interaction and relationships between people, organizations and the community.

Randomized controlled trials have been all but dismissed in health promotion work because of the aforementioned reasons, not to mention that they can also be a very extremely costly and lengthy undertaking. A study which attempts to make a direct link between health promotion capacity and health outcomes, however, would necessitate the use of some type of controlled conditions in order to isolate contribution of various components. One concept that suggests a method of overcoming the difficulties in RCTs has been suggested by Penelope Hawe et al., (2004) in an article entitled *"Complex interventions: how "out of control" can a randomized controlled trial be?"* The article suggests that standardization in randomized controlled trials has been taken to mean that all the components of an intervention are the same in different sites. Hawe et al. argue, however, that for something as complex as capacity building, which must be responsive

to local context, standardization of an intervention is counterproductive. The solution suggested is to standardize the functions provided by the key elements of the intervention while allowing the form to be adapted ((Hawe, Shiell & Riley, 2004). This approach could allow for the isolation of capacity building components to health outcomes while providing convincing evidence of the effectiveness of capacity building interventions, and merits further exploration.

A second challenge is the difficult task of measuring health promotion capacity. Work undertaken by the Canadian Heart Health Initiative has helped to illuminate these measurement issues which include: multiple understandings of terms; evolving understanding of capacity; invisibility of capacity building; detecting change within a dynamic system; staff turnover; time course required for change; attribution for change in capacity; understanding a process through 'snap-shot' measurements; lack of existing gold standard measurement tools; validity and credibility of instruments; evolving nature of measurement tools; gathering perspectives from multiple levels within organizations; dealing with conflicting perspectives; and managing and disseminating sensitive data (Ebbesen, Health, Naylor & Anderson, 2004). To address these issues the CHHI is exploring a number of strategies ranging from adopting participatory processes to the development of monitoring systems. These strategies are just now being explored but findings could be instructive.

Finally, the processes involved in enhancing the multiple components of capacity are complex and involve subtleties among relationships and organizational dynamics which are often hard to detect. To isolate the contribution of capacity building efforts on health status, research must be lengthy enough to allow the processes to evolve and research methods must be sensitive enough to capture these subtle processes and to tease out the reasons for successes and failures. However, use of a framework and indicators to guide intervention development and evaluation (like the NSW Health model) makes teasing out subtleties attainable.

V. Conclusion

While the purpose of this literature review was to document the relationship between efforts to build health promotion capacity and positive health outcomes, it is possible only to establish inferences about the pathways through which this is likely to occur. The state of the research literature on health promotion capacity and health outcomes is in its infancy. While the steps in the process of capacity building, key components of capacity building and indicators of successful capacity building have been studied and documented, there have not been any evaluations that directly show health promotion capacity to improve health outcomes, although there is evidence for the pathways through which this is likely to occur. While some degree of linkage has been demonstrated in a number of contexts, there still needs to be further work done to establish direct evidence that enhanced capacity among health promoters directly results in improvements in health outcomes.

It is important to note some limitations of this review. First, included in this review are well-designed studies which were relevant to the relationships depicted in the OHPRS framework. It is possible that less well-designed studies exist which may provide additional evidence for the causal pathway. However, our discussions with leading key informants in the capacity building field lead us to be confident that this research does not exist. Second, this review included published literature up to September 2004. Because the area of capacity-building is currently a very dynamic field of study, it is likely that there may be some research underway or completed which has not yet been published in the literature. Our discussions with key informants led us to believe that establishing the links in the OHPRS framework is of primary concern to many and that studies will or are being undertaken to help fill in the gaps identified in this paper.

References

Baum, F. (1998). Measuring effectiveness in community-based health promotion, in J.K. Davies and G. MacDonald (eds): *Quality, Evidence and Effectiveness in Health Promotion*, New York, NY: Routledge Publications.

Ciliska, D., Miles, E., O'Brien, M.A., Turl, C., Tomasik, H.H., Donovan, U., & Beyers, J. (1999). The effectiveness of community interventions to increase fruit and vegetable consumption in people four years of age and older. PHRED Review. Unpublished document.

Contento, I.R. (1995). The effectiveness of nutrition education and implications for nutrition education policy, programs and research: a review of research. *Journal of Nutrition Education,* 27, 277-418.

Ebbesen, L.S., Heath, S., Naylor, J., & Anderson, D. (2004). Issues in measuring health promotion capacity in Canada: a multi-province perspective. *Health Promotion International,* 19(1), 85-94.

Ebbesen, L.S., Woodard, G.B., McLean, S., Butler-Jones, D., Green, K., Reeder, B.A., Steer, S., & Feather, J. (2001). The Saskatchewan dissemination story. *Promotion & Education*, Suppl 1, 35-40.

Farquhar, J.W., Fortmann, S.P., Maccoby, N., Haskell, W.L., Williams, P.T., Flora, J.A., Taylor, C.B., Brown, B.W., Solomon, D.S., & Hulley, S.B. (1985). The Stanford Five-City Project: design and methods. *American Journal of Epidemiology*, 122(2), 323-334.

Gibbon, M., Labonte, R., & Laverack, G. (2002). Evaluating community capacity. *Health & Social Care in the Community,* 10(6), 485-492.

Hawe, P., Noort, M., King, L., & Jordens, C. (1997). Multiplying health gains: the critical role of capacity-building within health promotion programs. *Health Policy*, 39, 29-42.

Hawe, P., Shiell, A., & Riley, T. (2004). Complex interventions: how "out of control" can a randomized controlled trial be? *BMJ*, 328, 1561-1563.

Holder, H.D., Saltz, R.F., Grube, J.W., Treno, A.J., et al. (1997). Summing up: lessons from a comprehensive community prevention trial. *Addiction*, 92, S293-S301.

Holder, H.D., Saltz, R.F., Grube, J.W., Voas, R.B., et al. (1997). A community prevention trial to reduce alcohol-involved accidental injury and death: overview. *Addiction*, 92, S155-S171.

Jackson, C., Fortmann, S.P., Flora, J.A., Melton, R.J., Snider, J.P., & Littlefield, D. (1994). The capacity-building approach to intervention maintenance implemented by the Stanford Five-City Project. *Health Education Research*, 9(3), 385-396.

Joffres, C., Heath, S., Farquharson, J., Barkhouse, K., Hood, R., Latter, C., & MacLean, D.R. (2004). Defining and operationalizing capacity for heart health promotion in Nova Scotia, Canada. *Health Promotion International*, 19(1), 39-49.

Labonte, R., Woodard, G.B., Chad, K., & Laverack, G. (2002). Community capacity building: a parallel track for health promotion programs. *Canadian Journal of Public Health*, 93(3), 181-183.

MacLean, D. (2001). Capacity building for health promotion and chronic disease prevention – Nova Scotia's experience. *Promotion & Education,* Suppl 1, 17-23.

NSW Health (2001). A framework for building capacity to improve health. Unpublished document.

NSW Health (1999). Indicators to help with capacity building in health promotion. Unpublished document.

OHPRS Impact Evaluation Committee. 2003 Summary Evaluation Report for the Ontario Health Promotion Resource System. Unpublished.

O'Loughlin, J. (2001). From diversity comes understanding: health promotion capacity-building and dissemination research in Canada. *Promotion & Education,* Suppl 1, 4-8.

Puska, P. (2002). Successful prevention of non-communicable diseases: 25 year experiences with North Karelia project in Finland. *Public Health Medicine,* 4(1), 5-7.

Puska, P., Koskela, K., McAlister, A., Mayranen, H., Smolander, A., Moisio, S., Viri, L., Korpelainen, V., & Rogers E.M. (1986). Use of lay opinion leaders to promote diffusion of health innovations in a community programme: lessons learned from the North Karelia project. *Bulletin of the World Health Organization,* 64(3), 437-446.

Riley, B.L., Taylor, S.M., & Elliott, S.J. (2001). Determinants of implementing heart health promotion activities in Ontario public health units: a social ecological perspective. *Health Education Research,* 16(4), 425-441.

Sahay, T.B., Rootman, I., & Ashbury, F.D. (2000). Review of nutrition interventions for cancer prevention. Unpublished document.

Treno, A.J., & Holder, H.D. (1997). Community mobilization: evaluation of an environmental approach to local action. *Addiction,* 92, S173-S187.

US Surgeon General (1989): Reducing the health consequences of smoking: 25 years of progress. Report of the Surgeon General. Washington, DC: US Department of Health and Human Services, Public Health Service, Centers for Disease Control, Center for

Chronic Disease Prevention and Health Promotion, Office on Smoking and Health. (DHHS Pub. No. CDC 89-8411).