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Communities That Care: A Comprehensive System for Youth Prevention and Promotion, and Canadian Applications to Date

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RÉSUMÉ

Une communauté ensemble (UCE ; en anglais, Communities That Care) est un système opérationnel basé sur les facteurs de risque et de protection qui permet aux communautés locales d'entreprendre la planification de la prévention sur plusieurs niveaux et dans plusieurs secteurs et de la mise en œuvre des programmes basés sur des données probantes. Le but de l'UCE est de prévenir plusieurs problèmes courants auxquels font face les jeunes : l'utilisation des substances, la délinquance, la violence, les grossesses précoces, le décrochage scolaire, et les problèmes de santé mentale. L'UCE est mis en œuvre en cinq phases, chacune accompagnée de sessions de formation spécifiques destinées aux leaders communautaires et aux bénévoles. Ces étapes sont le degré de disposition de la communauté, sa mobilisation, l'évaluation des facteurs de risque et de protection et des ressources disponibles dans la communauté, la planification stratégique communautaire, et la mise en œuvre et l'évaluation du plan stratégique de prévention. Des études d'évaluation des besoins, basées sur le sondage UCE pour les jeunes, ainsi que des évaluations quant au processus, à la mise en œuvre, et aux résultats témoignent, de façon prometteuse et croissante, de l'efficacité de l'approche UCE. Ces évaluations, alliées aux résultats prometteurs du petit nombre d'applications UCE réalisées jusqu'à présent au Canada, suggèrent que l'approche, maintenant disponible en français

comme en anglais, devrait être appliquée et évaluée plus largement dans le contexte canadien que ce n'est le cas à l'heure actuelle.

ABSTRACT

Communities That Care (CTC) is a risk-and-protection-based system that enables local communities to engage in multi-level, multi-sectoral prevention planning and implement evidence-based programs. The purpose of CTC is to prevent common youth problems (substance abuse, delinquency, violence, teen pregnancy, school drop-out, and mental health difficulties) and promote positive youth development. CTC is implemented in five phases, each accompanied by specific training sessions for community leaders and volunteers. These sessions are, respectively, community readiness, community mobilization, community risk, protection, and resource assessment, community strategic planning, and community plan implementation and evaluation. Needs-assessment studies of the CTC Youth Survey, process or implementation evaluations, and outcome evaluations have provided positive and growing evidence of the effectiveness of the CTC prevention approach. These evaluations, together with the promising results of the small number of Canadian CTC applications to date, suggest that the approach, now available in both English and French versions, should receive more frequent implementation and evaluation than is currently the case in Canada.

Introduction

Hawkins and Catalano (2002) define Communities That Care (CTC) as an “operating system” that allows a community to plan strategically to prevent common and often serious behavioural problems among young people and to promote their positive development. CTC is thus analogous to the Windows computer operating system. Just as Windows enables a person to use specific application programs (e.g., Word or PowerPoint) to attain personal or professional goals, so, too, does CTC permit a community to implement evidence-based programs to prevent youth problems and promote positive youth development. Since its inception in 1992, CTC has targeted five adolescent problem behaviours: substance abuse, delinquency, violence, teen pregnancy, and school drop-out. More recently, CTC has begun to extend its purview to include problems of mental health (e.g., depressive symptoms) and physical health (e.g., obesity). To date, CTC has been implemented in virtually every state in the US, as well as in the UK, the Netherlands, Australia, Canada, and, most recently, in Cyprus.

Theoretical Basis of Communities That Care

Social Development Model

CTC is theoretically derived from the Social Development Model (SDM) of the Social Development Research Group at the University of Washington in Seattle. The SDM promotes constructive involvements by young people within the community (bonding), encourages them to develop the competencies needed to deal successfully with situations that put them at risk of developing problem behaviours (skills-enhancement), and provides positive reinforcement for adherence to desirable community standards and norms (Arthur, Ayers, Graham, & Hawkins, 2004). CTC is also based on several key prevention principles that research on the antecedents of problem behaviours has suggested are both valid and needed:

- a) Providing guided mobilization and empowerment of the local community, with widespread involvement by community leaders, ordinary citizens, and young people themselves;
- b) Targeting multiple levels of intervention, given that risk and protective factors operate on the community, family, school, and individual/peer-group levels (Hawkins, Catalano, & Miller, 1992; Hawkins, Herrenkohl, Farrington, Brewer, Catalano, & Harachi, 1998; Shaw & Winslow, 1997);
- c) Addressing multiple problems, in light of the fact that rates of adolescent substance abuse and mental health difficulties, delinquency, violence, school dropout and teen pregnancy co-vary at the population level, due to their links with common risk factors, and also co-occur within the same individuals (Hawkins, Jenson, Catalano, & Lishner, 1988; Huizinga & Jakob-Chien, 1998; O'Donnell, Hawkins, & Abbott, 1995); and
- d) Implementing, with a high degree of fidelity, prevention programs that are tested and effective (i.e., evidence-based) and are pitched at the individual/peer, family, school, or community levels (Cady, 2004; Hawkins, 1999).

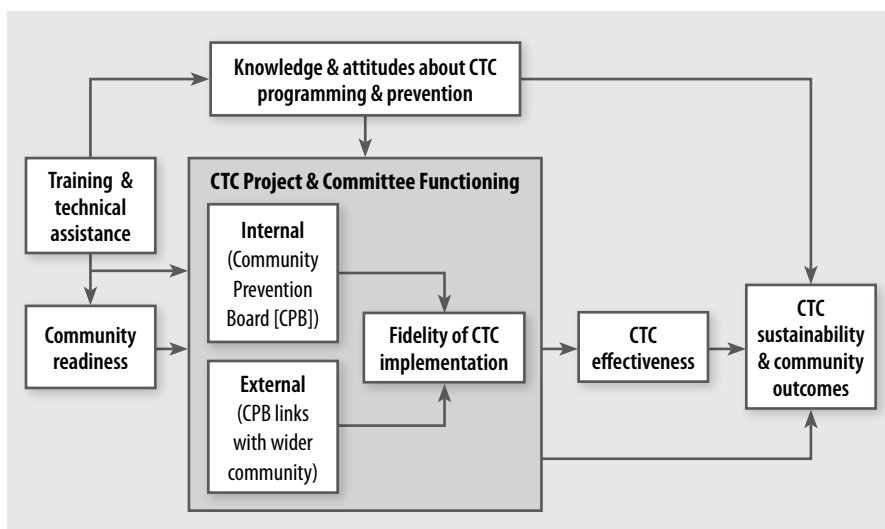
CTC Logic Model

As an operating system for youth prevention and promotion, CTC mobilizes community leaders, organizations, and grassroots members to tailor prevention planning, implementation and evaluation to local needs. Training and technical assistance support community leaders and ordinary citizens as they mobilize

resources, research risk and protective factors, and implement validated intervention programs on an ongoing, long-term basis. Figure 1 (adapted from Feinberg, Greenberg, & Osgood, 2004a and Greenberg, Feinberg, Gomez, & Osgood, 2005), presents the basic CTC logic model, which depicts the CTC system theory.

According to Figure 1, the level of readiness of a given community for the CTC prevention system will influence how well the approach works in that community. Also important are the training and technical assistance received by members of the key CTC committees, namely, the Key Leaders Group and the Community Prevention Board (described below in the section on the five-phase CTC implementation process).

Figure 1. Communities That Care logic model, showing the inputs, processes, and outcomes making up CTC as an operational prevention system¹



This training and technical assistance are intended to increase participants' positive attitudes and knowledge about the CTC approach and, more generally, about prevention. Finally, an effective CTC project is seen as leading to positive outcomes, including enhanced CTC project sustainability, reductions in risk factors and problem behaviours, and increases in protective factors and positive youth development. This CTC logic model provides the basic system template against which the evolution of any particular CTC project may be evaluated.

¹ Adapted from Feinberg, Greenberg, & Osgood, 2004a, and Greenberg, Feinberg, Gomez, & Osgood, 2005.

Communities That Care Model of Assessment and Intervention

Assessment of Risk, Protection, and Problem Behaviour: The CTC Youth Survey

The CTC Youth Survey (CTC-YS; Arthur, Hawkins, Pollard, Catalano, & Baglioni, 2002) was developed to provide scientifically valid information on the basis of which communities might select appropriate evidence-based preventive interventions. As shown in Table 1, the CTC-YS measures 23 risk factors and 10 protective factors that predict adolescents' use of alcohol, tobacco, and other drugs, delinquency, gang involvement, and other problem behaviours. The instrument also assesses the prevalence and frequency of drug use and antisocial behaviours. The instrument has been shown to have good psychometric quality (i.e., to be reliable and valid) in a range of populations (Glaser, Van Horn, Arthur, Hawkins, & Catalano, 2005). It is designed to be completed within a single class period (about 50 minutes) and is appropriate for adolescents between the ages of 11 and 18 (Arthur et al., 2002).

According to Feinberg, Ridenour, and Greenberg (2007), the CTC-YS is unique because of its broad assessment of risk and protective factors, its theory-based development, and its widespread use in community prevention programs. The CTC-YS assesses risk and protective factors that have been shown to be associated with problem behaviours among adolescents such as violence, substance use, school dropout, and teen pregnancy. The instrument, based on the well-established Social Development Model (Catalano & Hawkins, 1996), is a key CTC assessment tool that enables communities to identify risk and protective profiles and then to select evidence-based prevention programs and policies that target specific risk or protection factors.

Table 1. Risk and protective factors assessed with the Community That Cares Youth Survey, at the community, school, family, and peer/individual levels

Community Risk Factors	Community Protective Factors
Low neighbourhood attachment	Community opportunity for prosocial involvement
Community disorganization	Community rewards for prosocial involvement
Transitions and mobility	Laws and norms favourable to drug use
Perceived availability of drugs	Perceived availability of handguns
Family Risk Factors	Family Protective Factors
Poor family management	Family attachment
Family conflict	Family opportunity for prosocial involvement
Family history of antisocial behaviour	Family rewards for prosocial involvement
Parental attitudes favourable towards drug use	
Parental attitudes favourable to antisocial Behaviour	
School Risk Factors	School Protective Factors
Academic failure	School opportunity for prosocial involvement
Low commitment to school	School rewards for prosocial involvement
Peer/Individual Risk Factors	Peer/Individual Protective Factors
Rebelliousness	Religiosity
Early initiation of antisocial behaviour	Social skills
Early initiation of drug use	Belief in the moral order
Favourable attitudes towards antisocial behaviour	
Favourable attitudes towards drug use	
Low perceived risks of drug use	
Interaction with antisocial peers	
Friends' use of drugs	
Sensation seeking	
Rewards for antisocial involvement	

Intervention: The Five-Phase CTC Implementation Process

Communities adopting the CTC strategy use a five-phase implementation process that includes six different training modules (Hawkins, 1999; Quinby et al., in press). These phases are the following:

- 1) Assessing the extent to which a given community is ready to implement CTC;
- 2) Becoming organized and trained to implement CTC;
- 3) Assessing the level of risk, protection, and healthy or negative behavioural outcomes in the community;
- 4) Elaborating an action plan for the community; and
- 5) Implementing the plan and evaluating the degree to which programs have been faithfully implemented and outcomes achieved (Quinby et al., in press).

In phase 1, *Community readiness*, leaders in a given community who wish to invest in prevention evaluate the degree to which their community is prepared to adopt CTC and identify barriers to its doing so. Required are a shared belief in the usefulness of prevention and cooperation among community actors and agencies. Phase 1 also focuses on recruiting key leaders as CTC champions, negotiating with school boards to conduct the CTC youth survey, hiring a full-time CTC coordinator, and recruiting influential community members to take part in the initial CTC workshop, the *Key Leaders Orientation* (KLO).

In phase 2, *Community mobilization*, the community leaders receive a half-day of KLO from a certified CTC trainer. This training educates participants about the main principles of prevention science, describes the CTC system, and encourages the community leaders to identify potential members of the *Community Prevention Board* (CPB), the coalition that conducts CTC planning and prevention activities (Quinby et al., in press). During this phase, the second CTC training session, *Community Board Orientation* (CBO), is provided to the members recruited for the CPB. These individuals typically come from a wide range of community sectors: elected officials, parents, youth, social service, law enforcement, schools, public health, faith organizations, and business. This committee oversees CTC planning and implementation and later, in phase five, secures the resources needed to implement the strategic prevention plan that it has developed for the community. The two-day training, at which CPB members' attendance is crucial, covers content similar to that of the KLO. The Community Board Orientation introduces the Community Prevention Board members to the CTC theory, structure,

and process, strives to create a shared vision for the local community, and ends with the formation of work groups to implement CTC. These work groups include Board Maintenance, Risk and Protective Factor Assessment, Resource Assessment and Analysis, Public Relations, Youth Involvement, and Funding. During phase 2, the CTC coordinator establishes the CPB, recruiting members, identifying leaders for the work groups, and helping the work groups to set realistic and appropriate goals for the next year (Quinby et al., in press). The CTC trainer also assists the CTC coordinator through the provision of technical assistance.

In phase 3, the CPB members, with the assistance of the CTC coordinator, carry out a comprehensive assessment of community risk and protection factors, prevention services, and youth behaviour. This phase requires the administration of the CTC Youth Survey in local schools, usually to students in grades 6, 8, 10, and 12. Members of the Risk and Protective Factor Assessment work group of the CPB receive the third CTC training module, *Community Assessment Training*, to learn how to interpret the data provided by the CTC Youth Survey (as well as supplementary data from archival or other sources), identify elevated risk factors and depressed protective factors, and know the prevalence of young people's problem behaviour. During phase 3, the CPB receives the fourth CTC training workshop, *Community Resource Assessment Training*. This enables the CPB to carry out a resource assessment in which it identifies community programs, resources, and policies that address its prioritized risk and protective factors, promote healthy development, and prevent problem behaviours (Quinby et al., in press). The CTC trainer also provides technical assistance that enables the CTC coordinator to determine whether current community programs are high-quality, evidence-based services that are most likely to produce targeted outcomes. The resource assessment also identifies current gaps in services.

During phase 4, the full CPB examines the findings from phase 3 and develops a community action plan. The fifth CTC training module, *Community Plan Training* (CPT), helps the CPB to select evidence-based prevention programs that fit with their prioritized risk and protection factors. To select these programs, the CPB uses the *CTC Prevention Strategies Guide* (Hawkins & Catalano, 2004), which describes over 50 evidence-based prevention programs that, in at least one high-quality research trial, have had a positive impact on risk, protection, and problem behaviours. The CPT training teaches CPB members to write a community action plan that has clear and measurable prevention goals and describes explicitly how the small number of evidence-based programs or policies that it has selected will be implemented. During

this phase, the CTC coordinator's main role is to involve all CPB members and key stakeholders in developing the community action plan.

In phase 5, *Implementing the action plan and monitoring and evaluating program implementation and outcomes*, CPB members receive the sixth and final CTC training workshop, *Community Plan Implementation Training*. The latter emphasizes that prevention programs must be implemented with a high level of fidelity, in conformity with the content, amount of exposure, and mode of delivery specified by the program developers. Besides implementing the evidence-based programs that they have selected and included in their community action plan, CPB members learn how to monitor the progress of implementation and assess changes in participants. Phase 5 is a long-term, ongoing cycle. Every two years, the CTC Youth Survey is re-administered in the schools, and fresh supplementary community assessment data are gathered. After examining these new data, the CPB revises its action plan, targeting new risk or protective factors and selecting new evidence-based programs or policies to implement, in light of the new information.

Tools for Assessing the Fidelity of CTC Implementation During Phases 1 to 5

The CTC Milestones and Benchmarks rating tool

Fixen, Naoom, Blase, Friedman, and Wallace (2005) have argued convincingly that without high-fidelity implementation, even the best evidence-based programs are condemned to produce mediocre results, far below those of which they are capable. To evaluate the degree to which they have implemented the five phases of CTC with fidelity, CTC users employ a Milestones and Benchmarks instrument. The milestones are goals that communities are to meet, whereas the benchmarks are actions that community members take or conditions that have to be met to achieve these goals (Quinby et al., in press). The six training sessions explain the milestones and benchmarks and equip the CPB with the skills to achieve most of them.

An example of a milestone (from phase 3) would be "Identify priority risk and protective factors", and a benchmark in this process would be, "Decide who will be involved in the prioritization process". By completing the various milestones and benchmarks during each of the five phases, the CPB documents and evaluates the extent to which it has completed the core components of the implementation of the CTC operating system.

CTC assessment-of-training tools

As an additional way of evaluating the fidelity of implementation, several measures are used to assess the results of the six CTC training workshops. These measures include participant attendance records, pre/post changes in participants' attitudes and knowledge, and telephone surveys (using the Community Board Interview instrument) of CPB members some 6 to 12 months after the CBO training.

Evaluations of Communities That Care

Most of the evaluations of CTC to date have been *needs-assessments* (including studies of the reliability, validity, or other characteristics of the CTC Youth Survey), *process or implementation evaluations* (especially of CTC implementation fidelity), or *outcome evaluations* (of the effects of CTC on risk, protection, or youth behaviours).

Prevention Needs-Assessments: Studies With the CTC Youth Survey

Arthur et al. (2002) described the development, reliability, and validity of the self-report CTC Youth Survey (CTC-YS), which, in providing specific data on community needs (i.e., on the level of risk, protection, and adolescent problems), enables communities to select targeted, evidence-based prevention programs and policies. The CTC-YS is typically supplemented by key archival data (e.g., from the census) on risk factors such as extreme poverty, which is information not readily collected from student surveys (Hawkins, Catalano, & Arthur, 2002). Arthur et al. (2002) indicated that the CTC-YS was created for two reasons. First, research suggested that youth problem behaviours (e.g., substance use, violence, or delinquency) could be prevented by reducing risk or increasing protection. Second, an epidemiological tool was needed to assess a broad set of risk and protective factors among community youth populations and to guide the selection of appropriate preventive interventions. Arthur and his colleagues thus set about fashioning an instrument that could be administered within a single class period (about 50 minutes in length) and would be appropriate for young people between the ages of 11 and 18. The risk and protective factors assessed with the CTC-YS were empirically based. That is, they had been found to predict drug use and delinquent behaviour at the level of the individual young person in two or more longitudinal studies in which the factors had been measured before the outcomes. The internal consistencies of the risk and protection scales in the CTC-YS had an average value of .78, and all of the scales were significantly correlated in the predicted

direction with substance-use and delinquency outcomes (Arthur et al., 2002). Hawkins, Van Horn, and Arthur (2004) used CTC-YS data on 28,091 students in grades 6, 8, 10, and 12 in 41 small to moderate-sized US communities to test the key assumptions of the public-health approach on which CTC is based, namely that there are differences between communities in levels of risk and protection and that these differences are related to different levels of drug use. Inter-community variability in risk and protective factors and substance use (calculated as community-level intra-class correlations) was found to account for a meaningful amount of the total variability in substance use (most of which occurred between individual students). Moreover, almost all the inter-community differences in levels of risk and protection were, as hypothesized, significantly correlated with inter-community differences in substance use outcomes. With data from the same sample of 41 communities, Fagan, Van Horn, Hawkins, and Arthur (2007a) subsequently showed that most of the community and family risk and protective factors assessed with the CTC-YS, when aggregated to the community level, predicted the prevalence among students of tobacco, alcohol, and marijuana use two years later, whether in the same or different cohorts of students (although the community-level factors predicted better within than across cohorts).

Glaser et al. (2005) used CTC-YS data on 176,464 students and confirmatory factor analysis to show that the data provided a good fit with the hypothesized risk and protection factor structure of the instrument. Also, as expected, the older students had been exposed to greater risks and less protection than their younger counterparts.

Arthur et al. (2007) described the development and validation of optimal cut-off points for the CTC-YS scales, in prevention planning and prioritization of needs at a population level. These cut-off points resulted in dichotomized risk and protective factor scales that allow communities to establish risk and protection profiles in prevalence-rate terms, thereby facilitating prevention planning and selecting particular targets for intervention.

Feinberg, Ridenour, and Greenberg (2007) factor-analyzed two waves of CTC-YS data on large samples of Pennsylvania students in order to reduce 31 risk and protective factors to a smaller set of aggregated indices. The researchers felt that a smaller number of indices would be useful for avoiding problems of multicollinearity in relating risk and protection factors to youth outcomes as well as for facilitating comparisons between the community, school, family, or individual/peer domains. Their 8 aggregated indices (community cohesion, community availability of and norms regarding drugs and firearms, school

prosocial environment, family cohesion, family risk, peer antisocial behaviour, risky attitudes, and risky behavioural tendencies) were all related in the anticipated direction with youth problem behaviours, at a level that was as high or slightly higher than that attained by the original scales.

Fagan, Van Horn, Hawkins, and Arthur (2007b) investigated possible gender differences in the relationships between 22 risk and protective factors and serious delinquency. They found that all 22 risk and protective factors were significantly related to serious delinquency, for both genders, with the strongest relationships observed at the level of individual and peer factors. For both genders, social skills were strongly related with less delinquency, whereas rebelliousness, sensation-seeking, and having delinquent peers were associated with greater delinquency. Similarly, for both genders, poor family management was related to higher rates of delinquency, while opportunities at school for prosocial involvement were associated with less delinquency. Overall, the males had greater involvement than the females in serious delinquency because they had experienced stronger relationships between risk and offending, higher exposure to risk, and lower exposure to protection. Both genders, however, were seen as needing preventive interventions.

Process and Implementation Evaluations of CTC

Process and implementation evaluations by Social Development Research Group, University of Washington in Seattle

Hawkins, Catalano, and Arthur (2002) summarized the process-related findings that several evaluations of CTC had furnished up to that time. They noted that the initial field tests of CTC in the state of Washington had demonstrated that community leaders and residents would participate in the required CTC training, adopt the CTC risk-and-protection approach, implement prevention plans, and continue to use them (Harachi, Ayers, Hawkins, & Catalano, 1996; Harachi Manger, Hawkins, Haggerty, and Catalano, 1992). Moreover, communities in the state of Washington that had used CTC were considerably more likely to implement evidence-based prevention programs than communities that had employed a different prevention model (Arthur et al., 2004). These earlier as well as later studies indicated that communities trained to use the CTC operating system showed improved inter-agency collaboration, less service duplication, enhanced coordination in allocating resources, increased involvement of community stakeholders (professionals, citizens, and young people) in prevention activities, more effective education of local citizens concerning youth problems, greater

tailoring of prevention strategies to community-specific risk and resource profiles, and a greater likelihood of choosing empirically validated prevention strategies (Hawkins et al., 2002; Jenson, Hartman, Smith, Draayer, & Schurtz, 1997).

Quinby et al. (in press) have shown, with data collected during the first 18 months of the large-scale Community Youth Development Study (CYDS), that a high level of CTC implementation has been achieved. The CYDS is a five-year (2003-2008), group-randomized controlled trial of the efficacy of the CTC operating system. The study involves 24 small- to medium sized communities, 12 of which were randomly assigned to the experimental (CTC) condition and 12 to the control (prevention-services-as-usual) condition. Paired pre- and post-surveys from the Community Board Orientation showed that significant changes in a positive direction occurred on 14 of the 17 items assessed, covering participants' knowledge of prevention science and the CTC process. Eight months later, attendance at the CBO was found to be significantly related to greater board-member understanding of CTC, higher community readiness, more frequent attendance at board meetings, and more hours devoted to the CTC process. Also, when the CTC communities were at the halfway mark of phase five of the CTC process (implementation and evaluation), between 89% and 100% of the community coordinators and trainers rated the milestones in the first four and a half CTC phases as "completely met" or "majority met", even on those milestones and benchmarks that were rated as "very challenging" or "mostly challenging" (namely, addressing readiness issues; securing a CTC champion in the community; preparing archival data to supplement the CTC Youth Survey; engaging all stakeholders to support the community action plan; and identifying resources required for new programs and policy implementation).

Quinby et al. (in press) suggested that the high level of fidelity with which CTC was being implemented was due to the use of certified CTC trainers in presenting the six training sessions, easy-to-use materials and guides, the use of data from the CTC Youth Survey to set outcome goals, locally based CTC coordinators, the use of benchmarks and milestones to monitor implementation progress, and skilled technical assistance and coaching. Thus, when these elements are in place, CTC appears to provide communities with a feasible process for implementing science-based prevention.

Process and implementation evaluations by Prevention Research Center, Pennsylvania State University

In the mid-1990s, the Pennsylvania Commission on Crime and Delinquency funded a program of CTC implementation in more than 100 communities in the state (Feinberg et al., 2004a). A series of process studies based on these local CTC projects by a research group at the Prevention Research Centre at Pennsylvania State University have made an important contribution to understanding the various factors that influence the success of CTC implementation.

Feinberg, Greenberg, Osgood, Anderson, and Babinski (2002) examined the effectiveness of CTC training as a means of introducing prevention science into a community. They found that stakeholders' attendance at training was associated with greater individual-level knowledge of the relationship between risks and youth behaviour problems and greater general familiarity with the CTC framework. Greater attendance at training was also associated, at the project level, with better understanding of empirical criteria for selecting evidence-based programs. At both the individual and project (community) levels, attendance at training was also related to better internal CTC functioning (clarity of goals and roles, fidelity to the CTC prevention model, and board structure and stability) and better relationships with other community groups.

In a second CTC process study, Feinberg et al. (2004a) investigated whether measures of several key CTC domains – community readiness, prevention knowledge, coalition functioning, and barriers – were associated with the perceived effectiveness of community prevention coalitions. The investigators found that community readiness was indeed strongly related to perceived coalition effectiveness, a relationship mediated by the quality of coalition internal functioning. Also, CTC projects that had been implemented most poorly were marked by the highest levels of infighting. Finally, more favourable attitudes towards, and greater knowledge of, prevention on the part of community leaders were related to better internal coalition functioning (i.e., more purposeful functioning and lower rates of member turnover).

Feinberg, Greenberg, and Osgood (2004b) studied the correlates of CTC participants' perceived needs for technical assistance. They discovered that less community readiness to implement CTC, lower levels of internal coalition functioning and perceived coalition effectiveness, and lower rates of community leaders' attendance at initial CTC training sessions were all related to participants'

perceptions that more technical assistance was needed. The researchers also found that CTC project directors may underestimate the need for technical assistance in areas directly reflecting on their own skills (e.g., leadership development). Relatedly, Greenberg et al. (2005) found that even well functioning CTC community prevention boards needed technical assistance, especially in linking the assessment of risks to the selection and implementation of evidence-based programs. Also, more cohesive CTC board functioning predicted more positive perceptions of project efficacy and sustainability, and greater board knowledge of prevention was related to higher implementation fidelity, which, in turn, predicted greater sustainability. Finally, higher levels of community readiness, implementation fidelity, and board external influence all predicted decreased delinquency rates (Greenberg et al., 2005).

Gomez, Greenberg, and Feinberg (2005) examined the sustainability of CTC coalitions in Pennsylvania, beyond an initial three-year funding period. Successful sustainability was predicted by four indicators of the quality of early board functioning: greater board knowledge about prevention, more emphasis on the selection of evidence-based prevention programs, better internal board functioning, and greater fidelity in implementing the CTC model. Gomez et al. (2005) suggested that adequate early training and ongoing technical assistance were likely to promote higher-quality coalition functioning during the start-up phase and thus contribute to greater sustainability.

Feinberg, Riggs, and Greenberg (2005) investigated whether social network analysis may be useful for understanding differences among communities in their readiness to implement community prevention initiatives. They discovered that during the early start-up phase, the closer and more direct the ties among prevention board members, the higher the level of perceived readiness. Also, social networks in which many individuals rather than only a few were core members exhibited higher levels of readiness. Thus, social networks appear to be an important aspect of community change interventions.

Outcome evaluations of CTC

Over time, the strength and scope of the designs used in the US to evaluate the effects of CTC have increased greatly. The early evaluations were correlational in nature, whereas the two most recent studies have used quasi-experimental and group-randomized designs, respectively.

In its 1997 report to Congress, the Office of Juvenile Justice and Delinquency Prevention (as cited in Hawkins, 1999) stated that communities using CTC

had experienced reductions in risk factors and in crime. Buchanan County in Missouri, for example, had targeted three risk factors for priority attention: early and persistent anti-social behaviour, academic failure, and low commitment to school. During the 1996-1997 school year, after implementing a program to reduce these risks, Buchanan County found that 81% of students in the program improved failing grades in two or more core subjects to passing grades. The County also experienced a 78% decrease in truancy, a 62% decrease in tardiness, a 31% reduction in referrals for school discipline, and a 33% decrease in juvenile crime in the community.

Feinberg, Greenberg, Osgood, Sartorius, and Bontempo (2007), from the Penn State prevention research group, reported on a large-scale quasi-experimental impact study of CTC. Whereas the CYDS (Brown et al., 2007) is a group-randomized efficacy trial of CTC under optimal conditions, the quasi-experiment by Feinberg, Greenberg, et al. (2007) was an effectiveness study conducted under real-world conditions and at a population level. The participants were students attending random samples of schools in 2001 and 2003, in grades 6, 8, 10, and 12, as well as volunteer schools in 2003. A total of 43,842 students in 2001 and 101,988 in 2003 completed the CTC Youth Survey and took part in the study. There were 41 school districts associated with local CTC projects in 2001 and 94 in 2003 (many new CTC projects were funded in Pennsylvania between 2001 and 2003). The researchers focused on 15 risk factors from the school, family, and peer/individual domains (they excluded the community domain because they did not expect CTC to have an impact on broad community factors in a short period of time). Six outcome measures were studied: antisocial behaviors; drug involvement; 30-day alcohol use; binge drinking; being drunk or high in school; and tobacco use. Potential confounding variables at the school district level, including poverty, were controlled.

Results of this large-scale quasi-experiment show that CTC-associated school districts had lower levels of some risk factors and lower rates of substance use and delinquency than did non-CTC-associated school districts. In 2001, there were 2 times as many significant comparisons favouring CTC (in terms of reduced risk factors or improved outcomes) as would be expected by chance and 7.8 times as many in 2003. Second, when the analyses were restricted to those grade cohorts that could have been directly affected by evidence-based model programs, the CTC sites had 10.7 times as many positive outcomes as would have been expected by chance. Third, the greatest number of significant effects were found in the 6th grade students, in terms of risk reduction (via improvements in family supervision and discipline, friends' behaviour and

attitudes, and the student's own attitudes) and in terms of improved outcomes (on all the outcomes except drug use). Also, the CTC-associated schools showed consistent evidence of a positive impact on the outcome of anti-social behaviour, for grades 6 through 10. For the 12th grade, there was evidence of a positive impact by CTC on alcohol use and drug involvement.

Overall, Feinberg, Greenberg, et al. (2007) interpreted their results as providing substantial evidence that CTC had a positive impact in reducing risk factors and improving behavioural outcomes, under real-world conditions. This conclusion was buttressed by the fact that when the analyses in 2003 were limited to student cohorts who had been exposed to evidence-based programs targeting their age groups, the impact of CTC was even stronger. Moreover, Feinberg, Greenberg, et al. (2007) felt that their findings were conservative, for at least two reasons. First, many local CTC projects targeted age groups outside the range assessed by the CTC Youth Survey, such that the analyses did not capture the full range of CTC effects on communities. Second, the analyses compared CTC with a "prevention-as-usual" rather than with a "no-prevention" comparison group.

The five-year period of the CYDS (2003-2008) will soon be completed (although supplementary data-gathering will continue until the youngest children in the longitudinal sample have graduated from high school, in 2011). Thus, the results of this group-randomized efficacy study will soon begin to appear in the prevention literature. The only peer-reviewed CYDS-based paper to have been published as of this writing appears to be one by Brown, Hawkins, Arthur, Briney, and Abbott (2007), on the effects of CTC on community prevention service systems. These investigators examined changes between 2001 (pre-project) and 2004 (18 months after CTC implementation in 12 US communities) on three community-level outcomes. Controlling for respondent and community characteristics, multilevel analyses showed that the CTC communities, compared with the 12 control communities, had significantly greater increases in the adoption of a science-based approach to prevention in collaboration across various community sectors, and in cooperation on specific prevention activities. Brown et al. (2007) suggested that this success in changing proximal system outcomes, as a first step in producing more effective prevention services, would eventually lead to reductions in risk, increases in protection, and more positive youth outcomes.

Applications of Communities That Care in Canada to Date

CTC has been implemented in only a few Canadian communities. The first Canadian project was initiated a decade ago in Squamish, BC, a small city of 15,000 located on the west coast of Canada between Vancouver and Whistler. Initially supported by a three-year grant from Health Canada (1999-2002), CTC Squamish has succeeded in sustaining itself and is now becoming an important source of CTC training and consultation for other communities in BC. CTC Squamish will celebrate its first decade of existence by sponsoring a national conference in October 2008, at which the keynote address will be given by Richard Catalano, co-founder of CTC and the current director of the Social Development Research Group at the University of Washington. During its first cycle of operation, CTC Squamish implemented two evidence-based programs, Strengthening Families and the Perry Pre-School Program. More recently, it has expanded its prevention focus to include the area of drug and alcohol abuse.

In 2001-2004, the present author and several colleagues piloted an earlier version of CTC in three Ontario communities. Funding was provided by the Trillium Foundation of Ontario, the National Crime Prevention Centre, and the University of Ottawa ACADRE Centre (an organization promoting Aboriginal health research). The project involved partner organizations in the three communities: in Hawkesbury, Services for Children and Adults of Prescott-Russell; in Sudbury, the Children's Aid Society of Sudbury and District and N'Swakamok Native Friendship Centre; in Ottawa, the Nepean Community Resource Centre and the Centre for Research on Educational and Community Services at the University of Ottawa.

The pilot project began in 2001 in Hawkesbury, Ontario, a mainly francophone town of 10,000 people. A diverse Community Prevention Board of 15 members was established and collected data on community risk and protective factors, establishing objectives for each risk factor and the means of attaining each. CTC Hawkesbury chose to focus on improving out-of-school-time activities, persuading the city council to invest in city parks and positive youth activities and completing a baseline school survey of student problem behaviours and positive development.

In Sudbury, a city of 200,000, the CTC project (2002-2004) concentrated on young people in the urban Aboriginal population. A productive partnership was established between the local Children's Aid Society and the N'Swakamok

Native Friendship Centre. With the support of two Aboriginal staff members, CTC Sudbury created a broad consensus in the community regarding the major risk and protective factors and service gaps affecting Aboriginal youths and developed an inventory of available and needed resources for Aboriginal youths and their families.

In the Bayshore neighbourhood of Ottawa, the CTC project (2003-2004) served a mainly immigrant population of youths and their families. Despite the brevity of its existence, CTC Ottawa-Bayshore was able to form a Community Prevention Board, organize several well attended community events, and collect data on risk and protective factors.

In 2005, a third period of CTC development in Canada began. Services to Children and Adults of Prescott-Russell are now undertaking an ambitious training and implementation effort in three mainly francophone communities in eastern Ontario, namely, Hawkesbury, Rockland, and Casselman. Funding is being provided by the Ontario Ministry of Children and Youth Services. This project is implementing the most recent version of CTC, with training and technical assistance provided by the University of Washington. The CTC training materials and CTC Youth Survey have all been translated into French. An evaluation of the new Prescott-Russell project is being conducted by the Centre for Research on Educational and Community Services at the University of Ottawa, using the same approach and tools that are employed by the University of Washington. Four interim evaluation reports on the Prescott-Russell project have been issued to date, assessing the results of the first four of the six CTC training sessions, namely, that for CTC key leaders (La Roche & Flynn, 2007a), for Community Prevention Board members (La Roche & Flynn, 2007b), for CPB members regarding the assessment of risk and protective factors (La Roche & Flynn, 2007c), and for CPB members concerning the assessment of community resources (La Roche & Flynn, 2008). Interesting parallels with the University of Washington CTC training results have emerged. Later in 2008, the fidelity of implementation in the three Prescott-Russell communities will be evaluated and annual interviews with community leaders and volunteers will be initiated.

Finally, it should be mentioned that major elements of the CTC approach are being used at present in a school-based prevention initiative in three service districts of northern Ontario (Armstrong, Flynn, & Van Dyk, 2007). This initiative, while not a CTC project, demonstrates the flexibility of the prevention approach. The project involves only three family and child service agencies and four school boards and is thus not a community coalition.

Moreover, the initiative is concerned only with school, family, and individual/peer risk and protective factors, and thus excludes community-level factors. Nevertheless, the use of major elements of the CTC approach has allowed prevention needs to be assessed through administration of the CTC Youth Survey in 85 schools and the selection of an evidence-based program, Lion's Quest. Based on the lessons learned from the pilot evaluation in English and French in 2007-2008, Lion's Quest is likely to be more widely implemented in the three service districts and four school boards in the future.

Conclusion

Overall, the CTC approach emerges as very promising from the foregoing review. It has much to commend it: a well established theoretical base, clearly sequenced training and implementation procedures, a strong emphasis on strategic planning and evidence-based programs, and supportive needs-assessment, process/implementation, and outcome evaluation data. Its initial applications in the Canadian context have also been positive. Taken together, this suggests that the time has come for more frequent implementation and more adequately funded evaluations of CTC in Canada.

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