

# Community governance of the Kahnawake Schools Diabetes Prevention Project, Kahnawake Territory, Mohawk Nation, Canada

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PREVENTION PROJECT (KSDPP) COMMUNITY ADVISORY BOARD<sup>1</sup>

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## SUMMARY

Health promotion emphasizes the importance of community ownership in the governance of community-based programmes, yet little research has been conducted in this area. This study examined perceptions of community ownership among project partners taking responsibility for decision-making related to the Kahnawake Schools Diabetes Prevention Project (KSDPP). Project partners were surveyed cross-sectionally at 18 months (T1) and 60 months (T2) into the project. The perceived influence of each project partner was assessed at T1 and T2 for three domains: (i) KSDPP activities; (ii) KSDPP operations; and (iii) Community Advisory Board (CAB) activities. Project staff were perceived to have the greatest influence

on KSDPP activities, KSDPP operations and CAB activities at both T1 and T2. High mean scores of perceived influence for CAB members and community researchers, however, suggests that project decision-making was a shared responsibility among multiple community partners. Although academic researcher influence was consistently low, they were satisfied with their level of influence. This was unlike community affiliates, who were less satisfied with their lower level of influence. In keeping with Kanien'kehaka (Mohawk) culture, the findings suggest a participatory democracy or shared decision-making as the primary mode of governance of KSDPP.

*Key words:* community control; community empowerment; community health promotion; indigenous governance

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## INTRODUCTION

The Ottawa Charter for Health Promotion is guided by the principle of empowerment [World Health Organization (WHO), 1986], which has transformed the underlying assumptions of community research and practice. With the community as the centre of gravity in health promotion (Green and Raeburn, 1988), empowerment is

aimed at changing the contextual and relational aspects of social systems through community processes that actively engage community members in programme-related decision-making (Thompson and Kinne, 1999). In this way, community members are enabled to influence and gain control over those conditions that affect

the health of their community. Approaches to community organizing that foster empowerment suggest that community members should not merely be consulted or informed about a programme with research-related decisions being made by researchers; instead, they should direct the course of the community intervention through active participation in decision-making (Arnstein, 1969; Green, 1986). This has led to an increased utilization of locality development, social action and asset-building models of community organizing, where researchers form 'partnerships' and 'alliances' for health with community members (Fawcett *et al.*, 1995; Israel *et al.*, 1998).

With an emphasis on community participation as the way of fostering community empowerment, researchers rely less on a 'professional expert' model where research is conducted *on* communities, and rely more on participatory approaches where research is conducted *with* community members (Green *et al.*, 1995; Fetterman *et al.*, 1996). The professional expert model is driven by an explicit power differential between the researcher and the researched, magnified by the hallmarks of post-positivist research—control and manipulation (Cook and Campbell, 1979). This is in contrast to the epistemological stance of participatory approaches that require 'shared power and control of decision-making' [(Green *et al.*, 1995), p. 10], spawning a new generation of evaluation studies in community research (Simmons *et al.*, 1997; Burrus *et al.*, 1998; Voyle and Simmons, 1999). Participatory approaches to research are preferred in Aboriginal communities as they allow multiple voices to be heard and establish a process for dialogue in the development and implementation of culturally appropriate interventions (Boston *et al.*, 1997; Macaulay *et al.*, 1999; Conway *et al.*, 2000).

Participatory research implies a democratic decision-making process between multiple stakeholder groups. While promoted as a practice model for academic researchers collaborating with communities (Green *et al.*, 1995), there is little quantitative evidence assessing which stakeholder groups influence decision making. This questions whether participatory research can be implemented in the real-world context of community interventions. This paper assesses the perceived community ownership of a participatory community-based health promotion project, the Kahnawake Schools Diabetes Prevention Project (KSDPP), cross-sectionally, at 18 months (T1) and 60 months (T2) into the project. Specific

objectives sought to determine: (i) perceived community ownership by measuring the relative share of perceived influence in decision-making by various groups of project partners at T1 and T2; (ii) the perceived primary ownership of KSDPP at T1 and T2; (iii) the presence of transference of ownership between project partners from T1 to T2; and (iv) perceptions of individual and community level control at T2 only.

## **Intervention and project governance**

### *Intervention*

Kahnawake is a Kanien'kehaka (Mohawk) community of ~7000 people, located 15 miles south of Montreal, Canada. In 1985, 12% of adults aged 45–64 years had documented type 2 diabetes, twice the rate of the general population of the same age (Macaulay *et al.*, 1988).

Concerns about high rates of diabetes, perceived increase of obesity among children, combined with the Kanien'kehaka tradition of caring for future generations, spurred the community to seek expertise from academic researchers to develop a diabetes prevention programme. The KSDPP intervention, which began in 1994, aims to change the physical environment and social norms of the school and community by promoting healthy eating and active lifestyles. The school diabetes prevention intervention consists of a classroom-based health education programme for grades 1–6, and a nutrition policy disallowing unhealthy food and promoting healthy food choices. The policy was initially developed by the Kahnawake Education Centre and the Kahnawake Combined Schools Committee, and reinforced by the KSDPP intervention staff through implementation of specific activities. A team of local health professionals and educators developed the curriculum. The community component consists of KSDPP partnering with community organizations to implement physical activity and healthy eating activities for children, teens, adults and families, in addition to creating supportive environments to enable behaviour change (Macaulay *et al.*, 1997).

### *Project governance*

KSDPP involves the active participation of community members and organizations, community researchers and academic researchers in all phases of the research process. The Community Advisory Board (CAB) consists of members from health, social, political, spiritual, recreational and

private sectors of the community, and interested community members. Community researchers are professionals from the health and education sectors, such as nutritionists, who have assumed research responsibilities. Membership of the CAB is promoted through an open-door policy, through active recruitment by project staff, and from individuals and organizations sharing an interest in preventing diabetes in the community. Project staff are represented by two intervention agents with education backgrounds and a secretary from the community, as well as an evaluation coordinator.

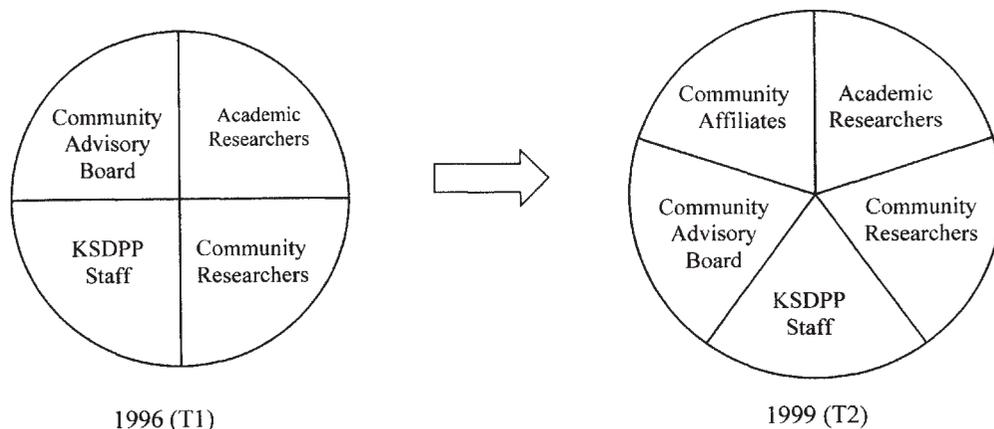
Although informed by the theoretical frameworks imparted by the academic researchers, the intervention agents used their cultural knowledge, community contacts, and education backgrounds to guide activity planning and implementation. Academic researchers are professors and graduate students in health-related disciplines from two neighbouring universities. The supervisory committee was responsible for fiscal accountability. Supervisory committee members (e.g. administrators, policy analysts) were appointed from those community organizations contributing funds to support the intervention, in addition to a representative from intervention staff and the research team. As the project moved from its developmental phase in 1996 through its implementation phase in 1999, a new association of community affiliates emerged. This new group of partners, heterogeneous in composition, was comprised of community members and representatives from organizations such as Onkwa'takaritahsthera, the local health agency board, and one of its subcommittees, the Diabetes

Working Group, in addition to local funding agencies and the local newspaper. These partners were involved in activities ranging from ensuring community coordination of diabetes to partnering with KSDPP in the planning and implementation of specific intervention activities. Therefore, five groups of partners could influence project decision-making primarily through the mechanism of meetings: (i) CAB members; (ii) community researchers and supervisory committee members (hereafter referred to as community researchers); (iii) academic researchers; (iv) project staff; and (v) community affiliates (at T2 only). Reported results are for 1996 data (T1) and 1999 data (T2), representing two distinct time points in programme implementation. Figure 1 summarizes the change in project partners from T1 to T2.

## METHODS

### Design

The KSDPP was initiated in 1994. Cross-sectional surveys of perceived community ownership were administered in 1996 and 1999, at 18 months (T1) and 60 months (T2) into the project. Self-report questionnaires were distributed to all committee members attending project meetings, and community organization representatives supporting the project in the periods preceding each survey. Surveys were distributed at project meetings or by mail at T1 ( $n = 35$ ) and T2 ( $n = 70$ ). A project staff member contacted participants by telephone, 2 and 4 weeks following distribution, to prompt the return of any outstanding questionnaires.



**Fig. 1:** Change in project partners of the KSDPP from T1 to T2.

Participants active in the project at both T1 and T2 were invited to respond to both surveys. Fifty-nine per cent of those surveyed at T1 (20 out of 35) remained active at T2. Surveys were also sent to committee members present at T1 or T2 only. All participant responses were anonymous. It was not possible to link individual data at T1 with individual data at T2. Of the 35 surveys distributed at T1, 28 (80%) were returned, and at T2, 44 (63%) out of 70 surveys were returned.

### Participants

At T1, CAB members ( $n = 18$ ) comprised the majority of the sample, followed by project staff ( $n = 4$ ), community researchers ( $n = 3$ ) and academic researchers ( $n = 3$ ). At T2, community affiliates who had become active by 1999 constituted the largest group of respondents ( $n = 17$ ), followed by CAB members ( $n = 13$ ), project staff ( $n = 5$ ), academic researchers ( $n = 5$ ) and community researchers ( $n = 4$ ). Community affiliates represented new members to the community partnership and were not affiliated with other groups at T1. Some respondents were associated with more than one partner (e.g. CAB and project staff) and thus wore 'multiple hats', while others were associated with a single partner. Partner affiliation was determined by self-reported primary affiliation and was counted only once in the sample.

### Instrument

The survey instrument was adapted from two previously validated instruments. At T1 and T2, perceived community ownership was assessed using an adaptation of Flynn's instrument (Flynn, 1995), validated in a neighbouring Kanien'kehaka community in New York state. At T2 only, perceived

control questions adapted from Israel and colleagues (Israel *et al.*, 1994) were added to the survey. Thus, three sets of questions were asked, corresponding to: (i) perceived influence; (ii) perceived primary ownership; and (iii) perceived control.

### Perceived influence

The same core questions were asked at T1 and T2. Using a four-point Likert response choice (1 = none, 2 = a little, 3 = moderate, 4 = a lot), participants rated the perceived influence of each of the four project partners at T1, and each of the five project partners at T2, on three project activity domains. This structure yielded 12 scales at T1 and 15 scales at T2 for the primary analysis. Each scale, corresponding to the perceived influence of a given project partner for a given activity domain, comprised four to six items.

The first domain assessed the perceived influence on KSDPP activities, operationalized as influence on KSDPP goals, annual and long-term plans, and project activities. The second domain assessed the perceived influence on CAB activities, such as committee member selection, committee structure, leading meetings, setting meeting times and setting the agenda. The third domain assessed perceived influence on KSDPP operations, namely staff organizing, hiring and evaluation, and overseeing the budget.

Cronbach's alpha was calculated to assess the internal consistency of each scale. By domain, at T1 and T2 respectively, coefficients ranged from 0.59 to 0.87 and 0.65 to 0.91 for KSDPP activities, from 0.54 to 0.90 and 0.73 to 0.87 for CAB activities, and from 0.40 to 0.87 and 0.63 to 0.88 for KSDPP operations (Table 1). The internal consistency of scales assessing the perceived influence of project staff was consistently lower

**Table 1:** Cronbach's alpha coefficients for perceived influence of project partners on KSDPP activities, CAB activities and KSDPP operations at T1 and T2

	Domain 1: KSDPP activities		Domain 2: CAB activities		Domain 3: KSDPP operations	
	T1	T2	T1	T2	T1	T2
CAB	0.87 (27)	0.85 (40)	0.69 (23)	0.82 (42)	0.87 (25)	0.85 (41)
KSDPP staff	0.59 (27)	0.65 (41)	0.54 (24)	0.73 (42)	0.40 (26)	0.63 (41)
Community researchers	0.84 (26)	0.91 (38)	0.83 (23)	0.85 (42)	0.83 (24)	0.84 (43)
Academic researchers	0.77 (25)	0.88 (40)	0.90 (24)	0.78 (42)	0.82 (25)	0.85 (43)
Community affiliates	NA	0.90 (40)	NA	0.87 (42)	NA	0.88 (43)

Numbers in parentheses represent the numbers of respondents with valid answers. NA, not applicable at this time point.

than that for other partners, ranging from 0.40 to 0.73 across domains, whereas the internal consistency of scales assessing the perceived influence of all other partners ranged from 0.69 to 0.91. This discrepancy may be attributed to the multiple affiliations of two project staff who implemented the intervention and actively participated within the CAB; individuals may have perceived the role of staff differently. Internal consistencies of the remaining scales suggest that the scales reflect a homogeneous set of items.

#### *Perceived primary ownership*

The second set of questions assessed perceived primary ownership, defined as the perceived influence of each partner. Members identified the primary owner of KSDPP, based on the question: 'All of these things considered, which of the partners would you say is the primary owner of KSDPP at the present time?'

#### *Perceived control*

As indicators of individual and community empowerment, perceived control questions developed by Israel and colleagues (Israel *et al.*, 1994) were adapted for the 1999 survey. Individual-level perceived control was assessed by participant responses to their level of satisfaction, opportunity to contribute ideas, ability to influence decisions, and feeling listened to by others. At the community level, participants were asked whether KSDPP, as a community organization, influenced decision-making in other Kahnawake organizations and in organizations outside of Kahnawake. Responses were rated using a four-point Likert scale. Responses to questions were treated as distinct variables.

### **Analysis**

Analysis objectives aimed to assess: (i) the overall mean perceived influence of each project partner on three project domains at T1 and T2; (ii) differences between T1 and T2 on the overall perceived influence of each project partner on these three project domains; (iii) stakeholder group differences on the perceived influence of each project partner on the three domains of the project at T1 and T2; (iv) overall perceived primary ownership using a single indicator at T1 and T2; and (v) stakeholder group differences in individual and collective indicators of perceived control at T2. Given the primary interest of the

study in overall group-level contrasts, the presence of naturally occurring changes in group composition from T1 to T2 and ethical considerations of anonymity and confidentiality, a conservative analytical approach was taken by treating observations as independent or unpaired. The Statistical Package for the Social Sciences Version 9.0 (SPSS Inc., 1999) and Computer Programs for Epidemiologists Version 3.0 (Abramson and Gahlinger, 1999) were used for analysis. Reported *p*-values were adjusted using the Holm procedure (Holm, 1979), which is considered the first choice for assumption-free adjustment of *p*-values for multiple comparisons (Aickin and Gensler, 1996).

In the first analysis, corresponding to objectives 1 and 2, *t*-tests were used to assess mean differences at and between T1 and T2 in the perceived influence of each of the five project partners within the three domains of KSDPP activities, CAB activities and KSDPP operations. Differences in the perceived influence of each project partner were compared within T1 and T2, and between T1 and T2. In the second analysis, corresponding to objective 3, mean differences in the perceived influence of the five project partners were assessed according to stakeholder group for the three project domains. Stakeholder groupings represented those taking responsibility for KSDPP governance, namely: (i) the CAB, or those who directed, advised and assisted with basic project operations and activities (persons involved in the CAB except for project staff, researchers and supervisors); (ii) those responsible for daily operations and strategic planning (project staff, community and academic researchers, and supervisory committee members); and (iii) community affiliates, or those who supported project operations and activities (community members who collaborate with KSDPP but who are not CAB or research team members) (T2 only). Groupings were based on the underlying structures of project governance and cross-affiliations of project partners. Data were analysed separately for each time point using univariate analysis of variance (ANOVA). In the analysis corresponding to objective 4, perceived primary ownership was assessed by chi-square analysis for nominal data (phi statistic). Differences in proportions were contrasted between the two time points for each stakeholder group. For objective five, univariate ANOVA was used to assess mean differences in the stakeholder groupings for individual- and community-level perceived control variables.

## RESULTS

### Respondent characteristics

The average age of respondents was 37.7 and 44.5 years at T1 and T2, respectively, with no statistically significant differences in age between stakeholder groups. Women comprised the larger proportion of partners at both T1 (53.8%) and T2 (68.2%); however, these differences were not statistically significant, and the distribution of gender did not differ between stakeholder groups (Table 2). Large standard deviations in project hours worked reflect within-group variation of full-time staff working with volunteers, practitioners and administrators from other community organizations who devote a portion of their time to KSDPP. At T2, the average level of involvement was in the 3- to 4-year range across the project stakeholder groups. In this case, the large standard deviations around the mean reflect the movement of community members and researchers in and out of the project.

### Perceived community ownership

Mean differences in the perceived influence of each project partner in three activity domains (KSDPP activities, CAB activities and KSDPP operations) were examined at T1 and T2. The data were further examined for stakeholder group differences.

Table 3 reports the means and standard deviations of perceived influence for each project partner, and the statistical significance of the mean differences within each domain for the two time points. Project staff tended to carry the most influence in all three domains for T1 and T2. Academic researchers were generally perceived as having a lower amount of influence relative to other partners. At T2, the new project partner of community affiliates was perceived as having the least amount of influence relative to the other partners. CAB members were perceived as having greater perceived influence at T1 and T2 on CAB activities relative to community researchers. Community researchers, however, were perceived as having greater influence on

**Table 2:** Characteristics of project stakeholders completing the perceived ownership surveys at T1 and T2

	Overall		CAB		Daily operations		Community affiliates	
	T1	T2	T1	T2	T1	T2	T1	T2
<i>n</i>	28	44	18	13	10	14	NA	17
Age (years)	37.7 (9.0)	44.5 (10.9)	38.1 (10.0)	48.8 (12.9)	36.9 (7.4)	41.3 (7.9)	NA	43.9 (10.9)
Gender (% male)	46.2 (9.4)	31.8 (7.0)	52.9 (11.7)	23.1 (11.7)	33.3 (14.5)	50.0 (13.4)	NA	17.6 (9.2)
Hours worked per month	23.4 (44.2)	21.5 (43.5)	3.4 (2.9)	5.33 (4.2)	55.3 (59.7)	49.3 (64.0)	NA	3.11 (2.2)
Months involved	NA	43.5 (17.8)	NA	46.6 (15.1)	NA	45.6 (19.7)	NA	38.3 (18.3)

Values are represented as mean (SD).  
NA, not applicable at this time point.

**Table 3:** Perceived influence of project partners on KSDPP activities, CAB activities and KSDPP operations at T1 and T2

	Time 1			Time 2		
	KSDPP activities <sup>a</sup> <i>n</i> [mean (SD)]	CAB activities <sup>b</sup> <i>n</i> [mean (SD)]	KSDPP operations <sup>c</sup> <i>n</i> [mean (SD)]	KSDPP activities <sup>d</sup> <i>n</i> [mean (SD)]	CAB activities <sup>e</sup> <i>n</i> [mean (SD)]	KSDPP operations <sup>f</sup> <i>n</i> [mean (SD)]
1. CAB	33 [3.06 (0.60)]	28 [2.99 (0.68)]	32 [2.22 (0.82)]	43 [3.17 (0.56)]	42 [3.29 (0.70)]	42 [2.66 (0.77)]
2. KSDPP staff	33 [3.64 (0.43)]	31 [3.61 (0.40)]	32 [3.78 (0.29)]	43 [3.82 (0.22)]	42 [3.62 (0.47)]	41 [3.71 (0.41)]
3. Community researchers	32 [3.25 (0.53)]	28 [2.30 (0.76)]	32 [3.01 (0.72)]	43 [3.12 (0.70)]	42 [2.40 (0.84)]	43 [3.01 (0.76)]
4. Academic researchers	32 [2.79 (0.67)]	29 [1.57 (0.65)]	32 [2.46 (0.86)]	43 [2.88 (0.68)]	42 [1.81 (0.66)]	43 [2.32 (0.86)]
5. Community affiliates	NA	NA	NA	43 [2.22 (0.62)]	42 [1.81 (0.77)]	43 [1.75 (0.73)]

NA, not applicable at this time point.

Holm's adjusted *p*-values within domains, as follows. <sup>a</sup>Means: 1 versus 2 and 4 ( $p < 0.01$ ); 2 versus 3, 3 versus 4 ( $p < 0.05$ ). <sup>b</sup>Means all differ ( $p < 0.01$ ). <sup>c</sup>Means: 1 versus 2 and 3, 2 versus 3 and 4 ( $p < 0.01$ ); 3 versus 4 ( $p < 0.05$ ). <sup>d</sup>Means: 1 versus 2 and 5, 2 versus 3–5, 3 and 4 versus 5 ( $p < 0.01$ ). <sup>e</sup>Means: 1 versus 3–5, 2 versus 3–5, 3 versus 4 and 5 ( $p < 0.01$ ). <sup>f</sup>Means: 1 versus 2 and 5, 2 versus 3–5, 3 versus 4–5, 4 versus 5 ( $p < 0.01$ )

KSDPP operations than academic researchers at T1 and T2, and community affiliates at T2. Within each of the three domains, differences between means at T1 compared with T2 were tested for significance. Holm's adjusted  $p$ -values revealed no significant differences.

Group differences on perceived influence of the different project partners among the three defined stakeholder groups (CAB member, daily operations, community affiliates) at T1 and T2 were initially contrasted by domain (KSDPP activities, KSDPP operations, CAB activities) in univariate models including the following covariates: age, gender, and length and amount of involvement in the project. None of these variables were statistically significant in any model; they were therefore removed from subsequent analyses to conserve statistical power. Main effects models, with adjusted  $p$ -values, were statistically significant for the 1996 data for outcomes related to KSDPP activities ( $F_{1,24} = 17.80, p = 0.004$ ) and KSDPP operations ( $F_{1,24} = 7.75, p = 0.04$ ). While the same main effects were statistically significant in the 1999 data, the models were either marginally significant or insignificant with adjusted  $p$ -values. At T1, *post hoc* analyses revealed that CAB members perceived the influence of CAB in these domains to be higher ( $p < 0.01$ ) relative to the perception of daily operations.

### Perceived primary ownership

Across partner groupings, the majority of respondents perceived project staff (mostly

community members) as the primary owner of KSDPP at T1 and T2 (Table 4). The reduction between T1 and T2 in the frequency of responses in the project staff ownership category was statistically significant ( $p = 0.02$ ). Academic researchers were not identified as a primary owner at either time point, nor were community affiliates identified as a primary owner at T2. Trends toward greater perceived ownership between T1 and T2 for CAB members ( $z = 1.73, p = 0.08$ ) and community researchers and supervisors ( $z = 0.70, p = 0.49$ ) were not statistically significant.

### Perceived control

Table 5 summarizes the analysis for individual-level and community-level perceived control variables. The length and amount of respondents' involvement in the project did not influence results.

**Table 4:** Percentage of respondents by perceptions of primary ownership of the KSDPP, cross-sectionally at T1 and T2

Perceived primary owner	T1 % (n)	T2 % (n)
CAB	11.5 (3)	33.3 (14)
Project staff	80.8 (21)	50.0 <sup>a</sup> (21)
Community researchers	7.7 (2)	16.7 (7)
Academic researchers	0.0 (0)	0.0 (0)
Community affiliates	NA	0.0 (0)

NA, not applicable at this time point.

<sup>a</sup>T1 to T2,  $p < 0.05$ .

**Table 5:** Mean differences in perceived control (individual and community) variables among three stakeholder groups of KSDPP at T2

	Individual level perceived control				Community level perceived control	
	Listened to at meetings <sup>a</sup> n [mean (SD)]	Opportunity to contribute ideas <sup>a</sup> n [mean (SD)]	Can influence decisions <sup>a</sup> n [mean (SD)]	Satisfied with influence <sup>a</sup> n [mean (SD)]	KSDPP influencing decision-making in community n [mean (SD)]	KSDPP influencing decision-making outside community n [mean (SD)]
1. CAB members	13 [3.85 (0.38)]	13 [3.69 (0.48)]	13 [3.31 (0.48)]	13 [3.69 (0.48)]	13 [3.54 (0.52)]	13 [3.69 (0.48)]
2. Daily operations	14 [3.79 (0.43)]	14 [3.93 (0.27)]	14 [3.64 (0.50)]	14 [3.71 (0.61)]	14 [3.36 (0.50)]	14 [3.29 (0.61)]
3. Community affiliates	16 [2.94 (0.68)]	16 [2.63 (0.81)]	15 [2.53 (0.64)]	16 [2.69 (0.79)]	16 [3.06 (0.85)]	16 [3.31 (0.54)]
Overall	$F_{3,40} = 14.1,$ $p < 0.001$	$F_{3,40} = 21.7,$ $p < 0.001$	$F_{3,40} = 15.7,$ $p < 0.001$	$F_{3,40} = 12.2,$ $p < 0.001$	$F_{3,40} = 1.9,$ $p = 0.16$	$F_{3,40} = 2.5,$ $p = 0.09$

<sup>a</sup>Means: 1 versus 3, 2 versus 3,  $p < 0.05$ .

At the individual level, mean values for ‘feeling listened to at meetings’, ‘perceiving the opportunity to contribute ideas’, ‘having the ability to influence decision-making’ and ‘satisfaction with level of influence’ were lowest for community affiliate respondents ( $p < 0.001$ ). There were no significant stakeholder group differences on community-level indicators of perceived control.

## DISCUSSION

Main study findings point to a participatory democracy or non-hierarchical decision-making process as the primary mode of KSDPP governance, and community ownership of KSDPP at both T1 and T2. Although academic researchers influenced the project, they did not drive the decision-making process nor were they perceived as primary owners at T1 or T2.

Study findings should be interpreted in the context of three limitations. The first limitation concerns the lower response rate at T2. CAB members offered several interpretations for this. Some non-responders may have held negative views of the decision-making process and therefore chose not to complete the surveys due to dissatisfaction. Alternatively, the participatory democracy could have instilled a sense of trust in the group process, leading non-respondents to ascribe less importance to survey completion. The number of information requests upon community partners was identified as a barrier to completing the surveys. The second limitation concerns the small sample size, which reduced the statistical power of the analyses. The sample size, a reflection of community size, poses an ongoing challenge to the use of quantitative analyses in small communities. It points to the need for complementary qualitative analyses to understand governance of community projects. The third limitation concerns the study design. A pure cohort design was not feasible given the immigration and emigration of project participants within a dynamic participatory process. Thus, a cross-sectional design comparing project partner responses at T1 and T2 was used. A conservative approach was taken in the data analysis by treating observations at T1 and T2 as unpaired.

Notwithstanding these limitations, high mean perceived influence scores across multiple project partners on KSDPP activities, KSDPP operations and CAB activities suggest that decision-making

was based on a collective model, one that is characteristic of a participatory democracy. Even though project staff were perceived as carrying significantly more influence compared with other project partners on all three domains and were identified as primary owners at T1 and T2, CAB members and community researchers carried considerable and increasing influence on multiple domains. Apart from academic researchers, the remaining groups of partners were composed primarily of community members. Some partners carried more influence within certain domains than other groups, for example CAB members for CAB activities and community researchers for KSDPP operations, which is in keeping with operational mandates. Academic researchers carried the least influence at T1, along with community affiliates at T2, yet had close to a moderate amount of influence on KSDPP activities—the domain where their work was most active. Despite this, academic researchers reported satisfaction with their low influence. (Subgroup analysis of academic researchers showed that their level of satisfaction was close to four on a four-point Likert scale.) The new group of community affiliates, however, reported less satisfaction with their influence, highlighting the ongoing challenge of community participation in community health promotion (Altman *et al.*, 1991; Guldán, 1996). Of further interest is the finding that CAB members perceived themselves to hold greater influence in the domains of KSDPP operations and KSDPP activities than the other stakeholder groups. The welcoming environment and opportunity to be involved in the project could have shaped their perception of influence, even though they were unable to participate in subcommittees and specific activities. The influence of multiple partners in determining the overall direction of KSDPP demonstrates the responsiveness and accountability of the egalitarian leadership style promoted by project staff.

The discourse in health promotion has revolved around the ‘transference of ownership’ from academic researchers to community partners, particularly for researcher-initiated projects (Bracht *et al.*, 1994). In this study, however, there was no sign of transference of ownership from academic researchers to community partners in the governance of KSDPP. Looking back at the history of the project, KSDPP was initiated by community leaders, who invited academic researchers to join the partnership for their expertise in community research. This study

suggests that for community-initiated projects, the discourse around the notion of transference should shift to the diffusion of ownership among community partners.

As suggested by Zakus and Lysack (Zakus and Lysack, 1998), diffusing ownership to community partners raises issues of community representation through those groups of partners influencing KSDPP. This is a concern insofar as these groups are defined by the exclusion of particular members or groups in the community, an inference drawn from the work of Weber [see (Runciman, 1978)]. While the addition of the community affiliates as a project partner at T2 supports the 'open door' policy and the philosophy of KSDPP to continue to reach larger segments of the community, some groups and individuals may have excluded themselves for a variety of reasons. Some partners may perceive more of a natural link between KSDPP and their organizational structure and mandate. Others may not have participated because they were not completely in support of the project.

Although this study identifies KSDPP as a community-owned project where ownership was diffused among multiple groups of partners, there were periods when some tensions existed between KSDPP and other health and/or community service organizations, programmes or individuals. Some members of external groups have challenged the role of research in the community, based upon personal or community history where the external society conducted research on the community for its own benefit. Conflict and tension, however, have become a stimulus for ongoing critical reflection by ensuring that the project respects the role of community and the ideals of participatory research (Green *et al.*, 1995), as outlined by the Code of Research Ethics developed with community partners (Macaulay *et al.*, 1998). Previous research identifies the sources of tension inherent to community partnerships as multiple and diverse, ranging from the source of project funding (Plough and Olafson, 1994; Roussos and Fawcett, 2000) or the health issue being addressed (Goodman *et al.*, 1995) to the compatibility between community values and researcher values (Special Working Group of the Cree Regional Child and Family Services Committee, 2000) and the purpose and expected outcomes of the project (Giesbrecht and Ferris, 1993).

Results suggest that KSDPP is an empowering and empowered community organization (Israel *et al.*, 1994; Schulz *et al.*, 1995). It is an

empowering community organization in that decision-making was considered shared among multiple community partners, most of whom scored high on individual-level perceived control. Further to this, all groups were united in their perception of KSDPP influencing the health-related decisions of organizations within the community and in other Aboriginal communities (empowered community organization).

Findings were shared with researchers and CAB members at project meetings and in manuscript preparation. Rather than having a direct effect on project governance, issues raised from the study fed into an independent strategic planning process, offering participants further opportunity to influence and reflect on the decision-making process. This approach is in keeping with local culture, where the community takes responsibility for messages imparted from research.

The shared decision-making of KSDPP may reflect a timely fusion of Kanien'kehaka culture, with its emphasis on participatory democracy (Wallace, 1946; Morgan, 1962), and the value of social justice underlying health promotion (WHO, 1986). Kanien'kehaka values emphasize the importance of thinking collectively, sharing responsibility, listening, the impact of current decisions on seven generations into the future (a benchmark for the faces yet to come), in addition to the plurality of perspectives in generating consensus (Alfred, 1999). Community ownership of KSDPP is in keeping with both the strong autonomous roots that characterize the Kanien'kehaka (Bear *et al.*, 1984; Alfred, 1995) and with current approaches to implementation of community interventions (Barnes, 2000). This study has spurred further work on convergence of Kanien'kehaka values with those of health promotion.

From Cronbach's perspective (Cronbach, 1982), findings may transfer to those Aboriginal communities where programme characteristics and the social, cultural and political context are most similar to this study. In particular, consideration needs to be given to convergence with Kanien'kehaka values of sharing responsibility for collective well-being and broad-based community representation in consensus decision-making. These findings may be of further relevance to Aboriginal communities striving for self-determination owing to the effects of colonialism. With respect to programme characteristics, the community gathered around the issue of diabetes prevention as it was not viewed as socially

disparaging and, as a disease, diabetes posed a threat to the well-being of future generations.

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