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**Sports, The Arts and Community Programs:  
Rates and Correlates of Participation**

**W-98-18E**

**by**

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**October 1998**

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## Executive Summary

When children participate in sports and the arts, they quickly gain skills and enrich the quality of their lives. Joining a club or team provides an opportunity for children to learn how to interact with their peers and adults. Involvement in these activities thus protects children from having emotional and social problems.

But the fact is that large groups of children, aged 6 to 11, are not participating in these activities. Moreover, the children who need these programs are the least likely to get them. The results emphasize that sizeable groups of Canadian children are virtually excluded from participation in sports, the arts and community programs. This is particularly striking for the arts and community programs where over two-thirds of children, 6 to 8 years of age, were reported to have "almost never" participated in programs in the past year. For the older children, 9 to 11 years of age, over 60 percent "almost never" participated in the last year. In unsupervised sports the rates of poor participation were lower with one in six of the younger children, and one in seven of the older children, "almost never" having participated in the past twelve months.

Gender, income and community facilities were three strong determinants of not participating in activities. Girls were more likely than boys to participate in arts-oriented activities while boys were more likely to participate in sports. Children from low income families were the least likely to participate in sports, arts and community programs. These children were excluded from supervised sports in particular. In the community domain, as would be expected, the presence of good parks, playgrounds and play spaces in the neighbourhood was strongly associated with increased rates of participation in supervised sports, and to a less extent, in unsupervised sports and the arts.

The authors conclude that targeted programs are required to reach subgroups of children with particularly low participation rates, for example, poor children. In the latter case, it could be argued that any new community government initiative in sports, arts and community programs should be judged in part by its ability to attract high-risk children, such as children from poor families.

## Sommaire

Les enfants qui font du sport et s'adonnent à des activités artistiques acquièrent rapidement des habiletés et enrichissent leur vie. Comme membres d'un club ou d'une équipe, ils peuvent apprendre à entretenir des rapports avec leurs pairs et les adultes. La participation à ces activités contribue ainsi à prévenir les problèmes d'ordre affectif et social chez les enfants.

Or, un nombre considérable d'enfants âgés de six à onze ans ne participent pas à ce genre d'activités. De plus, les enfants qui ont besoin de ces programmes sont les moins susceptibles de les obtenir. Il ressort que des groupes appréciables d'enfants canadiens ne participent à presque aucune activité sportive, artistique ou communautaire. La situation est particulièrement frappante dans le cas des arts et des programmes communautaires. En effet, plus des deux tiers des enfants âgés de six à huit ans n'auraient «presque jamais» participé à des activités de ce genre au cours des douze derniers mois. Il en est de même pour plus de 60 % des enfants âgés de neuf à onze ans. Pour ce qui est des sports supervisés, plus du tiers des enfants âgés de six à onze ans n'y auraient «presque jamais» pris part au cours de la dernière année. Quant aux sports non supervisés, les taux de faible participation étaient inférieurs, c'est-à-dire qu'un sixième des enfants plus jeunes et un septième des enfants plus âgés ne s'y étaient «presque jamais» adonnés au cours des 12 derniers mois.

Le sexe, le revenu et la présence d'installations communautaires étaient trois importants déterminants de la non-participation à des activités. Les filles étaient plus susceptibles que les garçons de s'adonner à des activités artistiques, tandis que les garçons étaient plus susceptibles de faire du sport. Les enfants issus de familles à revenu modique étaient les moins susceptibles de participer à des activités sportives, artistiques et communautaires. Ces enfants étaient particulièrement absents des sports supervisés. Sur le plan communautaire, comme l'on s'y attendrait, la présence de bons parcs, terrains et aires de jeux dans le quartier était fortement associée à des taux accrus de participation à des sports supervisés et, dans une moindre mesure, à des sports non supervisés et aux arts.

Les auteurs concluent qu'il est nécessaire de mettre en œuvre des programmes ciblés vers les sous-groupes d'enfants dont les taux de participation sont particulièrement faibles, comme les enfants démunis. Dans ce dernier cas, on pourrait faire valoir que toute nouvelle initiative communautaire du gouvernement dans le domaine des sports, des arts et des programmes communautaires devrait être jugée en partie d'après sa capacité d'attirer les enfants à risque élevé, tels les enfants de familles pauvres.

## Table of Contents

<b>Executive Summary</b> .....	3
<b>1. Introduction</b> .....	6
<b>2. Hypotheses</b> .....	8
<b>3. Models</b> .....	9
<b>4. Methodology</b> .....	10
<b>5. Respondent</b> .....	10
<b>6. Variables</b> .....	11
6.1 Outcome (Dependent) Variables .....	11
6.2 Correlates (Hypothesized Predictor Variables).....	13
6.2.1 Sociodemographics and Family	
6.2.2 Community	
6.2.3 Child	
<b>7. Statistical Analyses</b> .....	16
<b>8. Results</b> .....	17
8.1 Hypothesis 1.....	17
8.2 Hypothesis 2.....	17
8.2.1 Sociodemographic Variables	
8.2.2 Community Variables	
8.2.3 Child Variable	
8.3 Hypothesis 3.....	22
<b>9. Discussion</b> .....	26
9.1 Limitations .....	28
9.2 Policy Implications .....	29
<b>Bibliography</b> .....	31

## 1. Introduction

When children participate and gain skills in the sports and the arts, not only is their present life quality enriched, but there appear to be long-term benefits extending into adult life (Jones and Offord, 1989; Offord et al., 1992; Poinsett, 1996). During childhood, the advantages include attainment of skills in activities such as swimming, ballet, and skating, better time use, increased self-esteem, and opportunities to identify with respected coaches and supervisors. Further, competence in the arts and sports has been reported as a factor protecting children against the occurrence of emotional and behavioural problems in situations where the children are at increased risk for these conditions (Offord, 1989). Similarly, participation in extracurricular activities, including athletics and the arts, lowered the rates of early school dropout, especially among at-risk students (Mahoney and Cairns, 1997). In adulthood, the presence of skills obtained in childhood through participation and instruction in sports, the arts, and through community programs can enrich lives throughout the grown-up years (Jones and Offord, 1989; Offord et al., 1992; Poinsett, 1996).

There is evidence in the literature that certain groups of children in Canada have reduced rates of participation in the sports and the arts. The prime example is economically disadvantaged children (Offord and Jones, 1983; Offord et al., 1985). Among children 5 to 15 years of age, living in a publicly-supported housing complex, the rates of participation in the arts and sports were much less than the rates of their middle-class peers. The differences were more marked if coached or supervised activities were considered. For example, among the poor children, 35% were reported to have ever played a musical instrument; the analogous percentage in the middle was 77%. When the question asked was whether the child had ever taken music lessons, the rate among the poor was less than a third of that of the middle class-20% versus 66%. In swimming, the percentages of the poor and middle class children having ever earned swimming awards were 28% and 62%, respectively.

This research paper uses data from the National Longitudinal Survey of Children and Youth (NLSCY) to address three questions:

1. Is there evidence that participation in sports, the arts and community programs is associated with improved psychosocial adjustment in children?
2. What are the rates of participation in these activities by selected sociodemographic variables?
3. What are the strengths of selected correlates in the sociodemographic, neighbourhood and child domains on participation rates?

## 2. Hypothesis

Three hypotheses arise from the research questions:

1. The greater the rates of participation in the sports, the arts and community programs, the better the psychosocial adjustment of the children. It is expected that this effect will hold across the spectrum of income levels, but will be stronger for economically disadvantaged children.
2. The rates of participation will vary markedly by particular sociodemographic characteristics; for example, economically disadvantaged children will have lower rates of participation across the board, than their middle-class peers; and girls will have lower participation rates than boys in sports, with the reverse being true for the arts.
3. Variables in all domains, sociodemographic, community and child, will make independent contributions as predictors of participation in the sports, arts, and community programs. The strongest predictors will be in the sociodemographic domain, especially low income and gender.



### 3. Models

Figure 1 depicts in diagrammatic form Hypothesis 1. The high-risk group will be defined by low income level, the outcome by one or more psychosocial problems in the child, and the moderating variable (Baron and Kenny, 1986) by participation rates in sports, the arts and community programs.

**Figure 1. Participation in the Sports, Arts and Community Programs as a Protective Factor in Psychosocial Maladjustment**

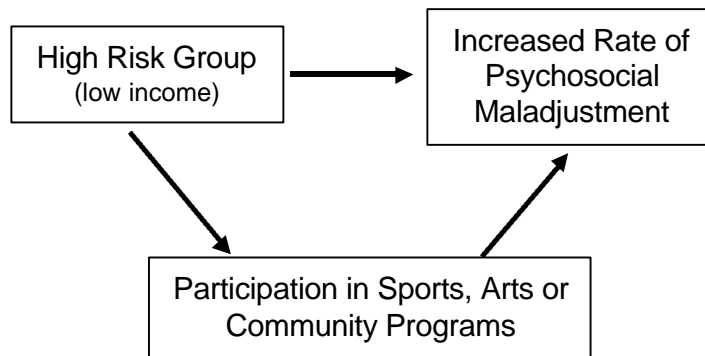
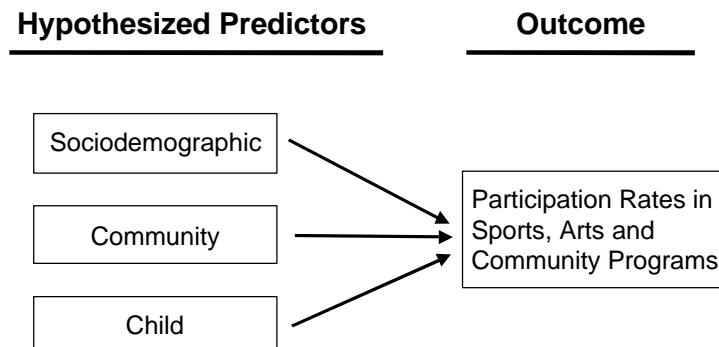


Figure 2 illustrates in schematic form the predictor variables for participation rates in sports, the arts, and community programs. It can be seen that it is hypothesized that variables in each of the domains make independent contributions to predicting rates of participation.

**Figure 2. Hypothesized Predictors of Participation in the Sports, Arts and Community Programs**



## 4. Methodology

The NLSCY is a longitudinal survey of a random sample of 22,831 children. The major contributions of the survey will be both in the scientific and policy domains. In the scientific domain, the data will increase our understanding of the frequency and distribution of strengths and problems in Canadian children that affect their current life quality and future life prospects. The results should also increase our knowledge about the different developmental pathways of children and youth in Canada, and the factors (both risk and protective) that are causally associated with the onset, persistence, remission and re-occurrence of harmful problems and conditions. In the policy domain, the data will help determine at what time periods in development (e.g., at birth, beginning school, entering high school) and in what domains (e.g., child, family, school, community) should limited resources be allocated to maximize their effect on promoting healthy child development. Data collection is occurring every two years; the first round of data collection (Cycle 1), on which this research paper is based, was carried out in the winter of 1994-1995.

The methodological details of the NLSCY are outlined in the Technical Appendix at the end of this publication; only issues specific to this paper are discussed here.

## 5. Respondent

The only source of data used in this research paper was information from the household member most knowledgeable about the child (PMK), usually the mother. Data on children, 6 to 11 only, are included in the present report (n=11, 219).

## 6. Variables

### 6.1 Outcome (Dependent) Variables

The four participation variables were defined as follows. Each PMK was asked:

1. In the last 12 months, outside of school hours, how often has \_\_\_\_\_ taken part in any sports which involved coaching or instruction?
2. taken part in unorganized sports or physical activities?
3. taken lessons or instruction in music, dance, art or other non-sport activities?
4. a) taken part in any clubs, groups or community programs with leadership, such as Brownies, Cubs, or church groups? (for children aged 6 to 8).  
  
b) taken part in any clubs, groups or community programs with leadership, such as Boys and Girls Clubs, Scouts, Guides or church groups? (for children aged 9 to 11).

The response categories for each of the four questions were: most days; a few times a week; about once a week; about once a month; and almost never. For the logistic regression (see Table 1), the first four categories were collapsed to form the category of “participation,” with the “almost never” category indicating “non-participation.”

**Table 1**  
**Strength of Association (Relative Odds) in a Logistic Regression Between  
Selected Predictor Variables and One or More Problems in the Child**

Variable	One or More Problems
<b>Main Effects</b>	
• age (6-8)	0.81***
• gender (female)	0.68***
• low income	1.18***
• single parent	1.78***
• family dysfunction	1.01***
• unavailability of good parks, playgrounds, and play spaces	0.96
• uncivic neighbourhoods	1.48**
• participated in supervised sports	0.92
• participated in unsupervised sports	0.78***
• participated in the arts	0.69***
• participated in community programs	1.02
<b>Significant Interactions</b>	
• low income x age	
• low income x availability of parks, etc.	

\* 0.01 < p < 0.05

\*\* 0.001 < p < 0.01

\*\*\* p < 0.001

## 6.2 Correlates (Hypothesized Predictor Variables)

### 6.2.1 Sociodemographics and Family

- a) **Age groups:** 6-8; 9-11
- b) **Gender:** self-explanatory
- c) **Income levels:** The four categories of income levels were based on the strategy used by Statistics Canada to arrive at the low income cut-off (LICO) (Statistics Canada, 1994). This definition includes a correction for income level for both family size and place of residence. The definitions of the four categories are follows:

*very poor* - includes children living in families where the adjusted family income is below 75% of the LICO. The percentage of children, aged 6 to 11, included in this category was 14.0%. In large urban areas with populations over 500,000 (e.g., Montreal, Toronto, Vancouver), the yearly income for a four-person household was less than \$23,303.

*poor* - includes children living in families where the adjusted family income is between 75% and 100% of the LICO. The percentage of children, aged 6 to 11, included in this category was 8.4%. In large urban areas, the yearly income for a four-person household ranged from \$23,303 to \$31,071.

*not poor* - includes children living in families where the adjusted family income was up to 25% above LICO. The percentage of children, age 6 to 11, included in this category was 10.2%. In large urban areas, the yearly income for a four-person household ranged from \$31,072 to \$38,838.

*well-off* - includes children living in families where the adjusted family income was more than 25% above the LICO. The percentage of children, aged 6 to 11, included in this category was 67.4%. In large urban areas, the yearly income for a four-person household was \$38,839 or more.

It should be noted that in the logistic regression, income level becomes a dichotomous variable with the categories “very poor” and “poor” collapsed to form the low-income category, and “not poor” and “well-off” collapsed to form the not-low-income category.

- d) **Single parent:** a family was classified as a single-parent family if the child was living with a biological, step, adoptive or foster mother or father who had no spouse or common-law partner living in the household.
- e) **Sibship size:** number of siblings of index child, aged 0 to 17, living in the home (1,2,3 or more).
- f) **Family functioning:** based on the 12-item, General Functioning Scale derived from the McMaster Family Assessment Device (Byles et al., 1988). This latter instrument assesses family functioning on six dimensions: problem solving, communication, roles, affective responsiveness, affective involvement, and behaviour control. The scores on the General Functioning Scale range from 12 to 48, with a higher score denoting more dysfunction.

### 6.2.2 Community

- a) **good parks and play grounds:** PMK strongly agrees or agrees with statement: There are good parks, playgrounds and play spaces in this neighbourhood.
- b) **civic neighbourhood:** PMK feels the neighbourhood is an excellent or good place to bring up children and strongly agrees or agrees with each of the following statements:
  - i) It is safe to walk alone in this neighbourhood after dark;
  - ii) It is safe for children to play outside during the day;
  - iii) If there is a problem around here, the neighbours get together to deal with it;
  - iv) There are adults in the neighbourhood that children can look up to;
  - v) People around here are willing to help their neighbours;

- vi) You can count on adults in this neighbourhood to watch out that children are safe and don't get in trouble; and
- vii) When I'm away from home, I know that my neighbours will keep their eyes open for possible trouble.

### 6.2.3 Child

The child has one or more problems in these areas: emotional or behavioural disorders, incidences of repeating a grade, or impairment in social relationships.

The detailed definitions of these variables are available elsewhere (Offord and Lipman, 1996). It should be pointed out that in one of the analyses (Table 1) "one or more problems" is an outcome variable.

**Table 2**  
**Rates of Participation in the Last Twelve Months in Sports, the Arts and Community Programs, by Age Group**

Activity and Age Group	Rates of Participation (percentage)				
	Most Days	A Few Times a Week	About Once a Week	About Once a Month	Almost Never
<b>Supervised Sports</b>					
6 - 8	2.5	29.7	26.4	4.3	37.0
9 - 11	6.6	34.8	20.8	4.4	33.4
<b>Unsupervised Sports</b>					
6 - 8	35.1	25.5	16.6	5.9	16.9
9 - 11	31.7	28.8	18.4	6.5	14.7
<b>The Arts</b>					
6 - 8	0.5	7.1	21.8	1.7	68.8
9 - 11	1.1	8.8	24.5	2/6	63.1
<b>Community Programs</b>					
6 - 8	0.3	2.9	25.6	2.0	69.2
9 - 11	0.5	4.8	26.0	3.4	65.3

## 7. Statistical Analyses

Statistical significance for data in Tables 2 and 3 and Figures 3 and 4 was tested using the chi-square test. For the multivariate analyses reported in Tables 1 and 4, a logistic regression was used. All the predictor variables were forced into the model and interactions tested were free to enter the model if  $p < 0.05$ . The logistic regression analyses provide data on the strength of the contribution of each variable (relative odds) in predicting the outcomes controlling for the effects of the other variables. All analyses used weighted data. The choice of variables to enter into the regression analyses was based on their availability in the data set, and their ability to operationalize the variables needed to test the models outlined in Figures 1 and 2.

**Table 3**  
**Rates of Participation in the Last Twelve Months in Sports, the Arts and Community Programs, by Gender**

Activity and Age Group	Rates of Participation (percentage)				
	Most Days	A Few Times a Week	About Once a Week	About Once a Month	Almost Never
<b>Supervised Sports</b>					
boys	5.6	39.7	21.3	4.5	28.8
girls	3.4	24.6	25.9	4.2	41.8
<b>Unsupervised Sports</b>					
boys	41.4	26.9	15.3	4.8	11.5
girls	24.9	27.5	19.8	7.6	20.2
<b>The Arts</b>					
boys	0.4	5.3	16.1	1.7	76.4
girls	1.2	10.7	30.5	2.6	54.9
<b>Community Programs</b>					
boys	0.6	3.4	22.1	2.9	70.9
girls	0.2	4.3	29.6	2.5	63.4



## 8. Results

### 8.1 Hypothesis 1

Table 1 addresses hypothesis 1 and presents data on the results of the logistic regression indicating the strength of association between selected hypothesized predictor variables, and one or more problems in the child. Participation in unsupervised sports and in the arts both made independent contributions to reducing the rates of children with one or more problems. For example, a child who participated in the arts compared to one who did not had 0.69 times the chance of having one or more problems taking into account the contributions of the other predictor variables. As would be expected, young age and female gender made significant independent contributions to reducing the rate of children with one or more problem, while low income, single parent, family dysfunction, and uncivic neighbourhood made significantly independent contributions to increasing the rate of one or more problems in the child. Since the variable, “family dysfunction” was continuous, the odds ratio of 1.01 indicates the amount of the increased strength of association for each unit increase on the scale.

Two interactions entered the model. Low income was a stronger independent predictor of one or more problems in older compared to younger children; and where there was the unavailability of good parks, etc., compared to when good parks, etc. were available. It should be noted that low income did not interact significantly with any of the participation variables indicating that their strength of association was not significantly different in the “low income” versus the “not-low-income” categories.

### 8.2 Hypothesis 2

#### 8.2.1 Sociodemographic Variables

Table 1 presents the rates of participation in the last 12 months in sports, the arts, and community programs by age group. Over one-third of the younger (aged 6 to 8) and older (aged 9 to 11) children (37.0% and 33.4%, respectively), “almost never” participated in supervised sports. The older children had higher participation rates “most days” and a “few times a week” than the younger children. For unsupervised sports, the participation rates were much higher and they did

not differ appreciably between younger and older children. Approximately one-third of both groups participated “most days”. Almost 1 in 6 (16.9%) of the younger children, and almost 1 in 7 (14.7%) of the older children “almost never” participated in unsupervised sports.

In the arts, the older children had slightly higher participation rates in all categories than the younger children, but over two-thirds (68.8%) of the younger children and almost two-thirds (63.1%) of the older children “almost never” participated in the arts. Similarly, in community programs, older children had slightly higher participation rates across the board than younger children, but 7 in 10 (69.2%) in the younger age group, and over 6 in 10 (65.3%) in the older age group “almost never” participated in community programs.

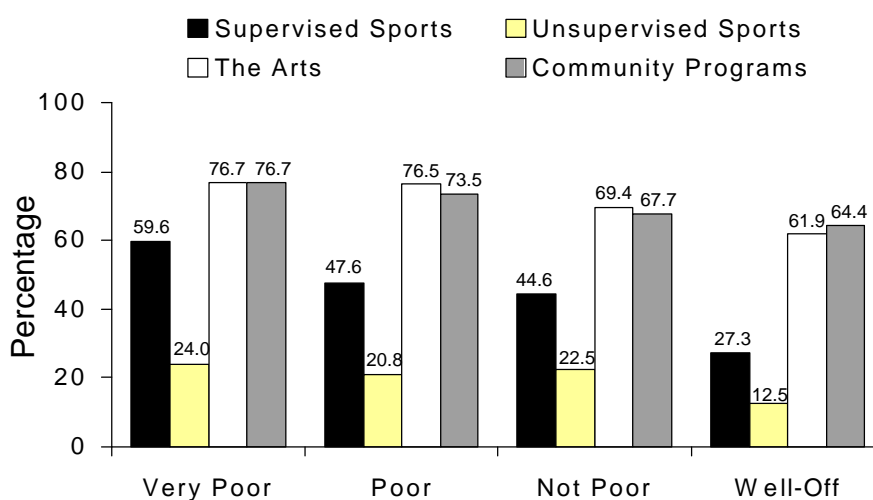
Table 3 presents rates of participation by gender. In supervised sports, boys had higher rates of participation “most days” and “a few times a week” than girls. Three in 10 (28.8%) of the boys and 4 in 10 (41.8%) “almost never” participated in supervised sports. In unsupervised sports, the participation rates for “most days” were higher in boys than girls (41.4% vs. 24.9%), and, as would be expected, more girls than boys “almost never” participated in unsupervised sports (20.2% vs. 11.5%).

In the arts, the gender ratio was reversed with girls having higher participation rates than boys for all categories. However, over one-half of the girls (54.9%) and three-quarters of the boys (76.4%) “almost never” participated in the arts. For community programs, the rates of participation were similar for boys and girls, but the majority of boys and girls “almost never” participated in community organizations (70.9% and 63.4%, respectively).

The chi-squares for the data presented in Tables 2 and 3 were strongly statistically significant ( $p < 0.0001$ ) which is to be expected because of the large sample size.

Figure 3 presents the rates of “almost never” participated in the last 12 months in sports, the arts and community programs by income level. All comparisons were strongly statistically significant ( $p < 0.0001$ ). For supervised sports, there was a striking gradient across income levels. The higher the income level, the less the percentage of children who “almost never” participated. The rate of “almost never” participated among the very poor was over twice that among the well-off (59.6% vs. 27.3%). In unsupervised sports, the rates of “almost never” participated differed little among the very poor, the poor and the not poor. However, the well-off group of children had a rate of “almost never” participated that approached half the rate of the other three income groups (e.g., rates among the well-off and the very poor were 24.0% and 12.5%, respectively).

**Figure 3. Rates of "Almost Never" Participated in the Last Twelve Months in Sports, the Arts and Community Programs, by Income Level**



The rates of “almost never” participated in the arts were high for all income levels but there was a constant gradient across income levels with increasing income associated with lower rates of “almost never” participated. Among the very poor, 76.7% of the children “almost never” participated in the last 12 months in the arts; this percentage dropped to 61.9% for the well-off. The picture for community programs also revealed high rates of “almost never” participated and a gradient across income levels. For example, the rate of “almost never” participated among very poor children was 76.7%; it dropped to 64.4% among well-off children.

The examination of single-parent status and participation rates revealed that participation rates were lower for all activities among children from single-parent families compared to their peers ( $p < 0.0001$ ) (not shown). Focusing on the “almost never” category, the rates for the offspring of single-vs. two-parent families were: for supervised sports: 48.0% vs. 32.7%; for unsupervised sports: 18.7% vs. 15.3; for the arts: 72.1% vs. 64.7%; and for community organizations: 73.9% vs. 65.9%).

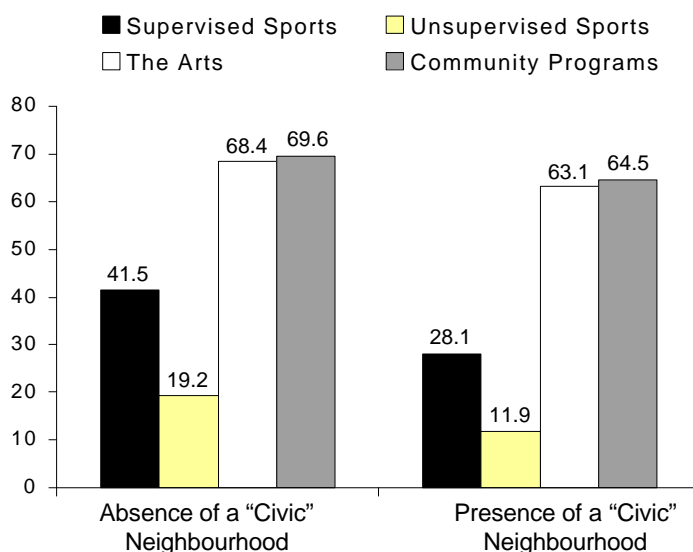
The relationship between number of siblings and participation rates in supervised sports, unsupervised sports, the arts, and community programs was not a strong or consistent one but all were statistically significant ( $p > 0.0001$ ) (not shown). For example, in the “almost never” category, centering on a child with no siblings vs. a child with three or more siblings, the rates were: for supervised sports: 37.1% vs. 44.2%; for unsupervised sports: 15.7% vs. 18.9%; for the arts: 67.7% vs. 67.8%; and for community programs: 72.3% vs. 64.0%).

### 8.2.2 Community Variables

As would be expected, strong agreement or agreement by the PMK that there were good parks, playgrounds and play spaces in the neighbourhood were strongly associated with increased rates of participation in supervised sports ( $p < 0.0001$ ) (not shown). For example, for the category, “almost never” participated, the perceived presence of good parks, playgrounds and play spaces was 33.1%; in the absence of these characteristics, the percentage in the “almost never” category was 43.3%. The analogous percentages for unsupervised sports were 15.0% and 18.8% ( $p < 0.0001$ ), and for the arts; 64.5% and 71.0% ( $p < 0.0001$ ). For community organizations, the presence of good parks and playgrounds was not positively associated with increased participation rates. For instance, for the category, “almost never”, the percentage of children from communities with perceived good parks, playgrounds and play spaces compared to children living in communities without these characteristics were 67.5% and 65.9%, respectively (not significant).

Figure 4 reveals the rates of “almost never” participated in the last 12 months in sports, the arts, and community programs by neighbourhood type, that is, the absence or presence of a “civic” neighbourhood. (All relationships were highly statistically significant) ( $p < 0.0001$ ). For all activities, an uncivic neighbourhood was associated with higher rates of “almost never” participated. The relationship was strongest for sports where an uncivic compared to a civic neighbourhood was associated with a 1.6 times (19.2%/11.9%) increase in the rate of “never participated” in unsupervised sports, and a 1.5 times (41.5%/28.1%) in supervised sports. The neighbourhood effects were much weaker for the arts and community programs where an uncivic neighbourhood resulted in only a 1.1 times increase in the odds of “almost never” participated in both cases.

**Figure 4. Rates of "Almost Never" Participated in the Last Twelve Months in Sports, the Arts and Community Programs, by Neighbourhood Type**



### 8.2.3 Child Variable

The presence of one or more problems in the child resulted in lower rates of participation in all four outcome categories although the differences, while statistically significant ( $p < 0.00001$ ) were not marked (not shown). For supervised sports, the percentages for the “almost never” participated category for children with versus without one or more problems were 39.3% and

33.7%, respectively. The analogous percentages for unsupervised sports were 18.5% and 14.9%, respectively, for the arts, 77.0% and 65.0%, respectively, and for community programs, 69.2% and 66.5%, respectively.

### 8.3 Hypothesis 3

Table 4 reports the results of the logistic regression including the strength of association between selected predictor variables and rates of “almost never” participated in the last 12 months in sports, the arts, and community programs. In the case of supervised sports, the strongest predictor of “almost never” participated was low income (relative odds (R.O.) =3.94). The odds of a child from a low income family “almost never” having participated in organized sports in the last 12 months was 3.94 times that of a child from a non-poor family taking into account the contributions of the other predictor variables. The other main effects in decreasing order of strength of association were: being a girl, unavailability of good parks, playgrounds and play spaces, being the offspring of a single parent living in an uncivic neighbourhood, having a child with one or more problems, and being aged 6 to 8.

In unsupervised sports, low income again was the strongest independent predictor (R.O.=2.54) followed by being a girl (R.O.=2.14). Being the offspring of a single parent made it less likely that the child would “almost never” engage in unsupervised sports. All the other main effects were significant predictors of the outcome.

In the case of “almost never” participated in the arts, low income again was the strongest independent predictor (R.O's=1.97). Being a girl made it less likely that the child had “almost never” participated (R.O.'s=0.37). All other main effects were significant independent predictors.

**Table 4**  
**Strength of Association (Relative Odds) in a Logistic Regression Between  
Selected Predictor Variables and Rates of "Almost Never" Participated in Last  
Twelve Months in Sports, the Arts and Community Programs**

Variable	Type of Activity			
	Supervised Sports	Unsupervised Sports	The Arts	Community Programs
<b>Main Effects</b>				
• age (6-8)	1.16***	1.16**	1.37***	1.19***
• gender (female)	2.01***		0.37***	0.70***
• low income	3.94***		1.97***	1.99***
• single parent	1.46***		1.06	1.46***
• unavailability of good parks, playgrounds, and play spaces	1.55***	1.18**	1.28***	1.04
• uncivic neighbourhoods	1.30***	1.60***	1.16***	1.17***
• one or more problems	1.18***	1.31***	1.45***	1.04
<b>Interactions</b>				
• age x gender				
• low income x age				
• low income x gender	x	x	x	
• low income x family type	x			x
• low income x availability of parks, etc.	x		x	x
• low income x neighbourhood type		x		
• low income x one or more problems				

**Note:** For all interactions: age=6-8. Family type=single parent, etc.

\* 0.01<p<0.05. \*\* 0.0001<p<0.01. \*\*\* p<0.001.

Finally, when the outcome was “almost never” participated in community programs within the last 12 months, the strongest predictor again was low income. This was followed by being a girl (less likely the outcome was experienced), living in a single-parent family, being young and living in an uncivic neighbourhood. The availability of good parks, playgrounds, and play spaces, and one or more problems were not significant predictors.

Table 5 presents subsample-specific odds ratios using data from the logistic regression. Its purpose is to indicate the directions of the interactions. For supervised sports, for example, low income had a stronger effect on “almost never” participated for boys than girls, for single-parent families compared to two-parent families, and for poor versus good availability of parks. In unsupervised sports, again the effects of low income are stronger for boys compared to girls, and uncivic versus civic neighbourhoods. In the arts, the effects of low income on “almost never” participated were stronger where there was poor compared to good availability of good parks, etc. Lastly, for community programs, the direction of the interactions were reversed. Low income had a stronger effect on “almost never” participated in two-parent compared to one-parent families, and where there was good compared to bad availability of good parks, etc.



**Table 5**  
**Subsample-Specific Odds Ratios Indicating the Direction of the Interactions**

Variable	Type of Activity			
	Supervised Sports	Unsupervised Sports	The Arts	Community Programs
<b>• low income by gender</b>				
➤ girls	2.87	1.68		
➤ boys	3.61	2.74		
<b>• low income by family type</b>				
➤ single-parent	3.53			1.18
➤ two-parent	3.40			2.13
<b>• low income by availability of parks, etc</b>				
➤ poor	4.04		2.57	0.95
➤ good	3.62		2.00	2.11
<b>• low income by neighbourhood</b>				
➤ uncivic		2.19		
➤ civic		2.08		

## 9. Discussion

The results provide some evidence that participation in the arts and unsupervised sports may protect children from having problems in the psychosocial domain. Both these activities made independent contributions to predicting a decrease in the number of children with one or more problems. Two points about these findings should be made. First, since the data are cross-sectional, the temporal relationships cannot be sorted out, and thus no causal influences can be made. It is not known, for example, whether participation in the arts leads to a decrease in children with one or more problems, or whether children without problems are more likely to participate in the arts. A third possibility is that both participation in the arts and a decrease in the number of children with one or more problems are a result of other factors in the child's background, for example, having very competent parents. Second, the data do not support the model as outlined in Figure 1. There is no interaction between low income and participation in the arts or unsupervised sports. That is to say, the magnitude of the possible beneficial effects of these activities does not vary between the poor and not poor; they apply equally across the two groups. Lastly, it should be noted that the limitations of the NLSCY data to determine whether or not participation in the sports, arts, and community programs are not confined to the cross-sectional nature of the data, but include the fact that the data themselves lack detail about such issues as the specificity of both the activities in the sports, arts, and community programs, and of the child outcome, one or more problems.

The results emphasize that sizeable groups of Canadian children are virtually excluded from participation in sports, the arts, and community programs. This is particularly striking for the arts and community programs where over two-thirds of children, 6 to 8 years of age, were reported to have “almost never” participated in programs in the past year. For the older children, 9 to 11 years of age, over 60% “almost never” participated in the arts or community programs in the past 12 months. In supervised sports, over one-third of the children 6 to 11 years of age, were reported to have “almost never” participated in the last year. In unsupervised sports the rates of poor participation were lower with 1 in 6 of the younger children, and 1 in 7 of the older children “almost never” having participated in the past 12 months.

In the sociodemographic domain, the role of gender as a determinant of participation rates differed for the sports compared to the arts and community programs. In sports, both supervised and unsupervised, girls were particularly disadvantaged with the girl:boy ratios of “almost never” having participated in the past year being 1.5:1 and 1.8:1, respectively. For the arts program, the picture is reversed with the *boy:girl* ratio for “almost never” participated being 1.4:1. For community programs, the participation rates by gender were not markedly different with the boy:girl ratio for “almost never” participated being 1.1:1.

Income level was an important determinant of rates of participation which would be expected from the literature (Offord et al., 1985; 1992). For supervised sports, the arts and community programs, with each increase in the amount of family income, the less likely the child was to have “almost never” participated in the last 12 months. This gradient was particularly striking for supervised sports. For unsupervised sports, the gradient was not present for the “very poor”, “poor” and “not poor” categories. Focusing on the extremes, the rates of “almost never” participated for all activities were always higher for the “very poor” compared to the “well-off”. This was particularly striking in the case of sports, both supervised and unsupervised. In both instances, the rate of “almost never” participated was approximately twice that for children from the “very poor” families compared to children from the “well-off” families. Finally, in the sociodemographic domain, single-parent status was a strong prediction of lower participation rates for all activities. On the other hand, sibship size was not a strong or consistent predictor of participation in any of the activities.

In the community domain, as would be expected, the presence of good parks, playgrounds and play spaces in the neighbourhood was strongly associated with increased rates of participation in supervised sports, and to a lesser extent in unsupervised sports and the arts. This relationship did not hold for participation in community organizations. In addition, children living in “civic” neighbourhoods were advantaged in terms of participation in sports, arts, and community programs. This relationship was particularly strong in the sports, both supervised and unsupervised. For example, children living in an “uncivic” neighbourhood compared to a “civic” neighbourhood were 1.5 times and 1.6 times more likely to have “almost never” participated in the last 12 months in supervised and unsupervised sports, respectively. Lastly, in the child domain, although the presence of one or more problems in the child resulted in lower rates of

participation in all four outcome categories, the results, although statistically significant, were not marked.

The results of the logistic regression revealed that predictors in this sociodemographic, community, and child domains made independent contributions to predicting each of the four outcomes. Thus the data supported the model outlined in Figure 2. In every instance, low income was the strongest predictor of “almost never” having participated in the last 12 months in sports, the arts, and community programs. For example, in supervised sports, the odds of a child from a low income family “almost never” having participated in this activity in the last 12 months was 3.94 times that of a non-poor child, taking into account the contributions of the other predictors. For every case but community programs, gender was a strong predictor of rates of participation. For each outcome, the strength of the relationship between the predictors and the outcome varied somewhat. For instance, in the case of supervised sports, unavailability of good parks, playgrounds and play spaces was the strongest predictor after low income and being a girl; in unsupervised sports, the analogous variable was “non-civic” neighbourhood. In the arts and community programs, one of more problems and single parent, respectively, were among the variables with the strongest independent relationship with the outcome of interest.

The interactions revealed in almost every instance the central importance of low income as a potential predictor for reduced participation rates. The deleterious effect of low income on participation rates was muted, but not removed in certain cases. These instances included, in supervised sports, being a girl, coming from a two-parent family, and living in a community with the availability of good parks, etc. In unsupervised sports, again being a girl, and living in an uncivic neighbourhood were associated with a lessening of the harmful effects of being poor on participation rates. The findings for community programs were different from the rest. It is not at all clear why the noxious effects of low income on rates of “almost never” participated in community programs were lessened in one-parent compared to two-parent families, and in communities where there was the availability of good parks, etc.

## 9.1 Limitations

There are three major limitations of the data, and the first two have been mentioned previously. First, the data are cross-sectional and thus causal inferences cannot be made. For example, these

results cannot disentangle the temporal relationship between children who have low participation rates in the arts and elevated rates of children with psychosocial problems. Second, the measures of the outcome variables are sparse, usually consisting of a single question. No information is available for the different areas about the specific activities engaged in, whether there were gains in skill development, and what barriers prevented participation. Lastly, the hypothesized predictor variables included in the analyses, while important, do not include ones that would provide information on the mechanisms by which these predictor variables may have their effect on participation rates. For example, it has been hypothesized that participation in sports and the arts could lead to reduced psychosocial problems in children by raising their self-esteem, by leading to better time use, or by promoting identification with non-antisocial adult role models such as coaches or supervisors (Offord and Jones, 1983). None of the variables needed to test the validity of these hypothesized mediating factors are available.

## **9.2 Policy Implications**

The first issue that must be addressed in the policy domain is whether or not participation in sports, arts and community programs is beneficial for children. If it is not, then the issue of unequal participation rates in different subgroups of children should not be of concern. There are two sources of evidence to support the assertion that participation in sports, arts, and community programs enriches children's life quality during childhood, and in their adult years as well. The literature supports this intervention (Offord, 1989; Offord et al., 1992; Poinsett, 1996; Mahoney and Cairns, 1997), as do the results presented in this paper pertaining to the arts and unsupervised sports.

Given the benefits of participation in these activities for children, the data in this paper have important policy implications for those groups, inside and outside of government, who have the responsibility for the delivery of sports, arts and community programs to groups of Canadian children. Enriched universal programs are needed where all children are offered the activities (Offord et al., 1998). In addition, targeted programs are required to reach subgroups of children with particularly low participation rates, for example, poor children. In the latter case, it could be argued that any new community government initiative in sports, arts and community programs should be judged in part by its ability to attract high-risk children, such as children from poor families (Offord et al., 1992).

The goal of new initiatives should be true universality in the sports, the arts and community programs. True universality has three characteristics: equal access, equal participation, and equitable outcomes (Offord et al., 1992). The term “equitable outcomes” means that different groups of children, for example, boys and girls, rich and poor, immigrants and non-immigrants, should have a similar range of outcomes in any of these skill activities.

The attainment of true universality in this area will require advances on several fronts, including effective ways of delivering these services to high-risk groups of children (e.g., Offord and Jones, 1990), and building civic communities with the availability of good parks and playgrounds. Further, it will require a commitment to the evaluation of program initiatives and a monitoring of the “state of the child” in this area. It may be that municipal recreation departments should focus on their area of strength, that is, offering first-rate programs to children (and their families) who are easy to reach and engage. However, another delivery system may be needed to effectively reach high-risk children. This other delivery system could consist of organizations or groups of community residents who are committed to, among other things, actively pursuing high-risk children (and their families) to gain their involvement (Offord and Jones, 1990). In any case, attempts at keeping score of participation rates in sports, the arts and community programs should use as their denominator all children in a community, not just those who voluntarily attend programs. Lastly, research is needed on a number of fronts. For example, data are required from intervention studies to indicate the effectiveness of participation in the sports, arts and community programs on raising the life quality and improving the life chances of children. Further, studies are needed to determine not only what the barriers are to participation in these activities, but also on the best strategies to reach high-risk groups.

Participation by children in sports, the arts and community programs has beneficial payoffs during both childhood and adulthood (Offord, 1989; Offord et al., 1992; Poinsett, 1996). The present situation concerning participation in these activities by children, 6 to 11 years of age in Canada, is troublesome. Large groups in the population are unserved and, in general, the children who need these programs the most are the ones least likely to get them.

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