Understanding the Early Years:

Burnaby, British Columbia

A Community Research Report

Prepared for:
Human Resources and Skills Development Canada

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KSI RESEARCH INTERNATIONAL INC. WITH
R. A. MALATEST & ASSOCIATES LTD.

SP-712-03-10E

Understanding the Early Years: Burnaby, British Columbia
A Community Research Report

Publié aussi en français sous le titre :

Comprendre la petite enfance : Burnaby, Colombie-Britannique
Rapport de recherche communautaire

Published: Autumn 2010

You can order this publication by contacting:

Publications Services

Human Resources and Skills Development Canada

140 Promenade du Portage

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Gatineau, Quebec

K1A 0J9

Fax: (819) 953-7260

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PRINT (English)

Cat. No.: NA

ISBN: NA

PRINT (French)

N° de cat. : NA

ISBN : NA

PDF (English)

Cat. No. HS4-23/29-2010E-PDF

ISBN: 978-1-100-14706-2

PDF (French)

N° de cat. : HS4-23/29-2010F-PDF

ISBN : 978-1-100-93554-6

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ACKNOWLEDGEMENTS

This report was prepared by J. Douglas Willms, with assistance from Elizabeth Fairbairn, Luana Marotta and Hasnain Mirza. The author is grateful to Donald Nadeau, Liz Nieman, and Gong-Li Xu and Eskender Mekonnen for comments on drafts of this report, and to other staff at Human Resources and Skills Development Canada who manage the Understanding the Early Years (UEY) initiative. He is also grateful to Joanne Barry, Heather MacDonald, and other staff members at R. A. Malatest & Associates Ltd. who managed and collected the data from the *Parent Interviews and Direct Assessments of Children Survey* for the study.

The author is also pleased to acknowledge the assistance of Jan Taylor, UEY Burnaby Community Coordinator, for her contributions to this report. He also gratefully acknowledges the invaluable support of Janey Talbot and Wanda Mitchell from the Burnaby School District. Special thanks are due to Burnaby Family Life, host organization of the Burnaby UEY Project, along with members of the Burnaby Early Childhood Development Community Table.

The author also wishes to express thanks to the parents and children for their participation in this initiative. Without the support and assistance of these community partners, this study would not have been possible.

EXECUTIVE SUMMARY

Burnaby, British Columbia is a densely populated urban municipality within Metro Vancouver. As the third largest municipality in British Columbia, it acts as a regional centre for industry, business and retail development and recreation. The physical landscape of the city includes two large freshwater lakes, a forested mountain parkland, an ocean beach, and several neighbourhood parks and open spaces.

Burnaby's current population is just over 200,000. It is a growing community with an increasingly diverse population and cosmopolitan character, including people from all corners of the world. About 65% of its residents indicated that English was not their first language. Language and communication issues are a challenge for service providers, especially those striving to meet the needs of families in a culturally sensitive and welcoming manner.

The Burnaby Understanding the Early Years (UEY) project is being hosted and managed by Burnaby Family Life, a non-profit organization that provides preventative, supportive, and early intervention services. Project staff worked in collaboration with several community partners, including Burnaby School District No. 41 and the Burnaby Early Childhood Development Community Table.

Understanding the Early Years is a national initiative aimed at strengthening the capacity of communities to use quality local research to help them to make decisions to enhance children's lives. This report is based on information collected with the *Parent Interviews and Direct Assessments of Children Survey (PIDACS)* in the community of Burnaby, as well as 2006 Canadian Census data. The PIDACS provides information on developmental outcomes of children and their families and neighbourhood environments and experiences.

The data in this report, which were collected from parents and their kindergarten children using the PIDACS, are a snapshot from late 2008 to early 2009 of the lives of kindergarten children whose parents agreed to participate in the survey. The 567 parents who were interviewed and 654 children who completed the direct assessments provide information on how kindergarten children in Burnaby are doing. Other local information available through the UEY project includes the results of kindergarten teacher assessments of children's development using the *Early Development Instrument*, information on the availability and accessibility of programs and services, and data from the Canadian Census describing local socio-economic characteristics. Taken together, these data can be used to start conversations in the community about the implications of the research and the needs of children in Burnaby. This process can help communities develop a community action plan aimed at addressing the needs of the community.

The 2006 Canadian Census data indicated that the children of Burnaby had several economic challenges. The average family income of about $74,000 was well below the national average of $82,000, while the median family income was about $61,000, which was below the national median of about $66,000. About 21% of the families had an average annual income below $30,000, compared to 15.1% of Canadian families. At 6.8%, Burnaby's unemployment rate was comparable to the national unemployment rate of 6.6%.

Alongside these challenges, the PIDACS results indicated that 13% of the families experienced low levels of family functioning. Also, the prevalence of parents reporting a positive, 'authoritative' parenting style was 41%, which was considerably below the Canadian PIDACS average of 56%. Neighbourhood quality was also an issue for many parents in Burnaby, with only about two-thirds of families considering their neighbourhoods to be of high quality. In addition, about one-third of families did not feel that they had adequate social support. The level of kindergarten children's participation in organized sports was relatively high, but the average time per day spent watching television or videos was 1.8 hours, which was above the Canadian average of 1.6 hours per day.

Families' use of educational, entertainment, cultural and recreational resources in the community was low for some resources, such as attending sports events, or going to science centres, museums, or art galleries, but it was relatively high for the use of libraries, recreational and community centres, and parks and recreational trails. The most prominent barriers to participation in children's programs were that programs were not available at convenient times (62%), there was no space available in the programs (50%), programs were only available to older children (47%), there was not enough time (47%), and programs were too costly (34%).

About 55% of the families in this community used some form of child-care arrangement while working or studying. Day-care centres were the most frequently used type of care, used by 13% of families.

Despite this uneven profile of family and community support for early childhood development, the research results showed that most kindergarten children in Burnaby were generally faring well. The average score on a measure of number knowledge was comparable to the Canadian average, while the average score on an assessment of pre-literacy skills was higher than the Canadian average. On the test of receptive vocabulary, however, average scores were below national norms. The prevalence of children with behaviour problems was consistent with the national norm, as was the prevalence of children with significant health problems, allergies, and other chronic conditions. Burnaby had a relatively low prevalence of children with asthma.

As the community works towards developing its action plan, it can consider the strengths and weaknesses uncovered by this local research. The UEY Initiative stresses the importance of a coordinated approach that involves families, teachers, and the wider community to determine the best programs and services to meet children's needs during their formative years.

I

INTRODUCTION

I. INTRODUCTION

A. BURNABY, BRITISH COLUMBIA - MILIEU FOR YOUNG CHILDREN'S DEVELOPMENT

Research based on the earlier Understanding the Early Years (UEY) studies and the National Longitudinal Survey of Children and Youth has shown that the social and economic context of the community and the socio-economic demographics of the population are helpful in understanding the factors that may contribute to children's developmental outcomes.

Burnaby is a densely populated urban municipality within Metro Vancouver. It is the third largest municipality in British Columbia and acts as a regional centre for industry, business and retail development and recreation. Burnaby is bordered by Vancouver to the west, New Westminster, Coquitlam and Port Moody to the east, the North Arm of the Fraser River to the south and Burrard Inlet to the north. Burnaby's elevation ranges from sea level to a maximum of 1,200 feet atop Burnaby Mountain. Overall, the physical landscape of the city is one of hills, ridges, valleys and alluvial plain. Many natural features, including two large freshwater lakes, naturally-forested mountain parkland, an ocean beach, a multitude of neighbourhood parks and open spaces, many with fish-bearing rivers and streams, provide an exceptional physical environment.

Burnaby is a growing community with an increasingly diverse population. Its population is made up of people from all corners of the world, speaking many different languages. Language and communication issues continue to be a challenge for the community, with a reported 65% of residents indicating English is not their first language. In 2004-05, parents' reports indicated that one third of Burnaby's kindergarten students had English as a second language. This diversity gives Burnaby its cosmopolitan character while providing a challenge to service providers, especially those supporting families, to meet clients' needs in a culturally sensitive and welcoming manner.

When the 2006 Canadian Census was taken, the population of Burnaby was approximately 200,000 (see Table 1-1). There were almost 40,000 children and youth from ages 0 to 18, and of these more than 11,000 were children aged 0 to 5 years. Compared with the rest of Canada, Burnaby had relatively low levels of family income; the average income was about $74,000 while the median income was about $61,000. The unemployment rate was 6.8%, which was comparable to the national rate of 6.6%. The level of education of adults was above the national average.

The 2006 Canadian Census data also showed that Burnaby had a relatively small Aboriginal population, at 1.5%. Between 2001 and 2006 about 11% of its population were recent immigrants. Also, about 17% of the residents of Burnaby had moved during the year preceding the 2006 Canadian Census, a rate that was slightly higher than the national average.

Burnaby is served by one school district, School District 41, numerous parks, recreation and cultural services and facilities, and a well-developed network of public partners and community service providers. School District 41 gives early learning high priority,

supporting twelve Strong Start Family Literacy Centres within the district. The community comprises 20 distinct neighbourhoods, each with one or more elementary schools with its own character.

Burnaby is meeting the current challenges of rapid growth, densification, and diversity with the strong spirit of cooperation and inclusion that has characterized its earlier growth and development.

TABLE 1-1. 2006 Census Profile for Burnaby compared with British Columbia and Canada

	Burnaby	British Columbia	Canada
Total population	200,950	4,074,385	31,241,030
Number of children ages 0-18	38,915	879,890	7,154,210
Number of children ages 0-5	11,315	240,790	2,013,065
Average family income (economic families)	$74,421	$80,511	$82,325
Median family income (economic families)	$61,379	$65,787	$66,343
Economic families with income below $30,000 (%)	20.5	16.2	15.1
Education - Population 15 years and older with:			
No certificate, diploma or degree (%)	16.8	19.9	23.8
High school or equivalent (%)	26.0	27.9	25.5
Post secondary education (%)	57.2	52.2	50.7
Unemployment Rate (% adults 15 years and over)	6.8	6.0	6.6
Moved residence within previous year (%)	17.4	17.0	14.1
Aboriginal population (%)	1.5	4.8	3.8
Immigrated 2001-2006 (%)	10.8	4.3	3.6

Source: Statistics Canada custom tabulations from the 2006 Census

Note. The term "economic family" refers to a group of two or more persons who live in the same dwelling and are related by blood, marriage, common law or adoption. The term "post-secondary education" refers to any education following high school completion, such as education in vocational colleges, community colleges and universities.

B. WHAT THIS STUDY IS ABOUT

Background: Understanding the Early Years Initiative

There is increasing evidence to support the importance of investing in the early years of children's development. Recent research shows that the formative years are critical, and that the kind of nurturing and stimulation that children receive in their early years of life can have a major impact on the rest of their lives. The evidence also suggests that the neighbourhoods and communities in which children grow up and learn influence their development; local neighbourhoods can affect parents' ability to provide a positive family environment and the ability of others in the community to support the development of children as they grow up.

Among neighbourhoods, communities and regions across Canada, policies and programs to enhance children's early development differ in important ways. They are shaped by a broad policy community that includes families, the private and voluntary sectors, and governments at local, provincial, territorial and federal levels. Gathering community-specific information on children and the places in which they are raised can help the community design policies and deliver programs that are sensitive and responsive to local needs. *Understanding the Early Years (UEY)*, a national initiative funded and managed by Human Resources and Skills Development Canada, is contributing to this process.

UEY's overall purpose is to enable members of communities to work together to address the needs of young children by:

- Raising family and community awareness of the importance of family and community factors that can influence young children's development; and by
- Strengthening their ability to use local data to help them to make decisions to enhance children's lives.

The Initiative provides three years of funding to community-based, not-for-profit organizations, on behalf of their communities, to help them to learn to generate and use local information on:

- the development of kindergarten (the year before Grade 1) children;
- family and community factors that influence children's development;
- local programs and services for young children and their families; and
- local socio-economic characteristics.

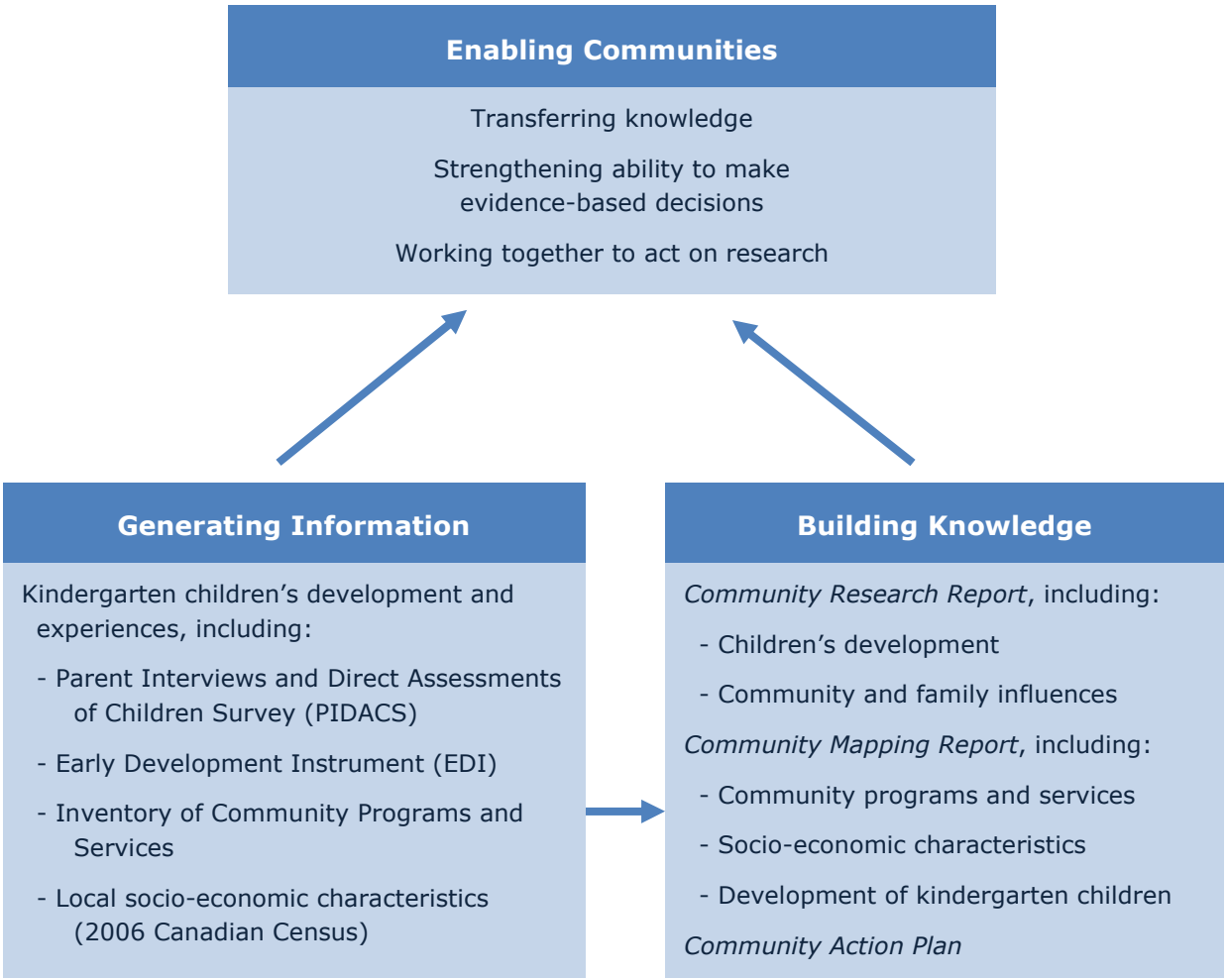
This information enables local UEY project staff, the UEY community coalition of organizations and individuals, and other community members to develop approaches to enhance the development of young children by building on the community's strengths and by addressing weaknesses in programs and services. Moreover, the information fosters partnerships among community groups and individuals, enabling them to make informed decisions on the best approaches for young children to thrive.

Each community project involves the participation of parents, teachers, schools, school boards, community organizations, and others interested in the well-being of children. UEY communities include children from diverse cultural, linguistic and economic backgrounds.

UEY was launched in 1999 as a research initiative to enhance knowledge of community factors that influence the early development of children. It began with a pilot initiative in North York, Ontario and included 12 community projects by 2002. In 2004, UEY became a national initiative. Twenty-one community projects began their three years of UEY activities in 2005, another 15 projects began in 2007, and one First Nations project began in 2008. This report, *Understanding the Early Years: Burnaby, British Columbia*, presents results for one of the 15 community projects that started UEY in 2007. Please see Appendix A for a list of all the UEY communities.

Figure 1-1 illustrates key components of the UEY Initiative and how it works in participating communities.

FIGURE 1-1. Key Components of the UEY Design



C. HOW THE STUDY WAS CONDUCTED

This report for Burnaby is a key piece of the local research made available to the community through the UEY Initiative. It highlights findings from the information collected from parents and children using the *Parent Interviews and Direct Assessments of Children Survey*, and presents them in the context of the social and economic characteristics of the community. The total set of UEY information includes parents' and teachers' perspectives on the development of kindergarten children, direct assessment results on kindergarten children's cognitive abilities, parents' perspectives on family circumstances and children's experiences, local information on programs and services, and local socio-economic characteristics. Table 1-2 indicates the types of data and their sources for UEY Burnaby.

TABLE 1-2. Types of UEY Information and Data Sources

Type of Information	Data Source	Collected By
Development of kindergarten children		
Parents' perspectives	Interview with parents using the *Parent Interviews and Direct Assessments of Children Survey*	R.A. Malatest & Associates Ltd., under contract to Human Resources and Skills Development Canada
Children's abilities	Three direct assessments of children's cognitive abilities using the *Parent Interviews and Direct Assessments of Children Survey*	R.A. Malatest & Associates Ltd., under contract to Human Resources and Skills Development Canada
Teachers' perspectives	Teacher-completed checklist, the Early Development Instrument	The Human Early Learning Partnership at the University of British Columbia, Vancouver, B.C., as part of an initiative of the Government of British Columbia
Family circumstances and children's experiences at home and in the community	Interview with parents using the *Parent Interviews Direct Assessments of Children Survey*	R.A. Malatest & Associates Ltd., under contract to Human Resources and Skills Development Canada
Information on community programs and services	*Inventory of Community Programs and Services*	UEY Burnaby
Local socio-economic characteristics	2001 and 2006 Canadian Censuses (and other available data)	Statistics Canada

The parent and child data in this report are from the *Parent Interviews and Direct Assessments of Children Survey* collected during the 2008-09 school year. The social and community contexts of the Burnaby community, presented in the Introduction, were provided by the local UEY project staff and developed from 2006 Canadian Census data.

Parent Interviews and Direct Assessments of Children Survey

The *Parent Interviews and Direct Assessments of Children Survey* (PIDACS) uses instruments designed for and adapted to five-year-olds in the National Longitudinal Survey of Children and Youth.[1] It has two complementary components: the PIDACS parent interviews and direct assessments of children's cognitive development. Together, they provide information on children's developmental outcomes in three domains: learning, social skills and behaviour, and physical health and well-being. Additional information is also collected on many of the important family, neighbourhood, and community factors that are known to influence these outcomes.

The PIDACS parent interview is conducted with the 'person most knowledgeable' (PMK) of the child, which is usually the mother or female guardian. In less than 10 per cent of the families surveyed, the PMK is the father or male guardian. The interview is conducted on the telephone or on the Internet; in-person interviews are conducted when the other options are not feasible. Parents are interviewed in the language of their choice when possible. The interview covers family, social and economic circumstances, children's activities at home, and involvement in the community, including child-care arrangements. The interview also includes questions on the child's behaviour and development, including positive social behaviour, anxiety, depression, physical aggression, and physical health and well-being.

The PIDACS direct assessments are conducted with the child by a trained assessor at the child's school. The assessments include measures of children's receptive vocabulary, copying and printing skills related to early literacy, and number knowledge. The instruments used to assess these skills are described in greater detail later in this report. The data from the PIDACS direct assessments can be used with the data from the PIDACS parent interview to describe children's outcomes in three domains: learning, which includes general knowledge, language development and cognitive development; social skills and behaviour; and physical health and well-being.

The PIDACS target population in each UEY community was children who entered kindergarten in autumn 2008. In most UEY communities, all the eligible children and their parents were invited to participate; in communities with more than 600 kindergarten children, including Burnaby, a sample was drawn with the intention of representing the kindergarten population. The data collection occurred from late autumn 2008 to spring 2009. Thus, the vast majority of the children were five or six years old at the time of the data collection. In Burnaby, 567 parents or guardians were interviewed, and 654 children were administered the PIDACS direct assessments. The average age of this sample of children in Burnaby was 5 years, 10 months.

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[1] The National Longitudinal Survey of Children and Youth is a comprehensive, longitudinal survey designed to measure and track the well-being and life experiences of Canada's children and youth as they grow up. It has been collecting data every two years since 1994. The Survey is conducted by Statistics Canada and sponsored by Human Resources and Skills Development Canada.

The PIDACS sample size for Burnaby is sufficiently large to provide accurate estimates of the mean scores for the measures of children's outcomes and for various aspects of family and community context. For example, on the measure of receptive vocabulary, the average score in Burnaby was 94.2. The standard error of this estimate, which provides an indication of how accurately the estimate was measured, was 0.7. If one could repeat the study a number of times, the estimates of the mean would lie within a range of plus or minus two standard errors, or between 92.8 and 95.6, about 19 times out of 20. All comparisons were tested for statistical significance at this level of significance ($p < 0.05$).

Generally when an estimate of a *statistic*, such as the difference between the mean for the community and the national average, is statistically significant it is not necessarily of substantive importance. This is often the case when sample sizes are large. Therefore, the reader is urged to consider the results for estimates that are statistically significant in substantive terms; for example, ask whether the difference in the percentage of children is important relative to the community's goals. Conversely, when sample sizes are small, an estimate may not be statistically significant, even though the results appear to be substantively important. This occurs, for example, in some of the cross-tabulations in this report when the cell size for a sub-population, such as unemployed fathers, is small. In that case, the difference in kindergarten children's outcomes between employed and unemployed fathers may appear large but is not statistically significant. In this case one cannot claim that the difference is important, as it may be simply attributable to sampling error.

The accuracy of the PIDACS data can be strengthened by weighting the data to make them representative of the entire population of kindergarten children in Burnaby. Not all families participated in the study, and it is possible that the families that agreed to participate differ in systematic ways from those that did not participate. Therefore a sample design weight was constructed to compensate for potential biases that might have resulted from non-response. For example, if only 8% of low-income families participated, a sample weight would make the data reflect the 10.8% actual incidence of low-income in a community. This was achieved by comparing the distribution of a measure of socio-economic status (SES) (derived from family income, years of education, and types of occupations) for the completed interviews and direct assessments for Burnaby with the distribution of SES of the target population based on 2006 Canadian Census data. The design weights remove bias associated with SES by weighting the responses of families differentially, such that the weighted sample has the same SES distribution as the 2006 Canadian Census.

The PIDACS indicators developed for this study were carefully examined to ensure that they were valid and reliable measures of the concepts being assessed. Validity refers to whether an instrument is measuring what it is intended to measure. For example, the PIDACS assessment of receptive vocabulary uses the Peabody Picture Vocabulary Test – Revised (PPVT-R). A number of studies have shown that receptive vocabulary is a moderately strong predictor of early reading skills.[2]

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[2] Scarborough, H. S. (1998). Early identification of children at risk for reading disabilities: Phonological awareness and some other promising predictors. In B. K. Shapiro, A. J. Capute, & B. Shapiro (Eds.), *Specific reading disability: A view of the spectrum* (pp. 77-121). Hillsdale, New Jersey: Erlbaum.
Schatschneider, C., Fletcher, J., Francis, D., Carlson, C., & Foorman, B. (2004). Kindergarten prediction of reading skills: A longitudinal comparative analysis. *Journal of Educational Psychology, 96*(2), 265-282.

Reliability refers to the consistency of a measurement process. For example, if a child were assessed using a particular measure, and then reassessed the next day following the same procedures, would the two scores be the same or similar? Reliability is closely related to validity, because acquiring evidence of the consistency of measurement requires that the various tasks or items observed are valid indicators of the underlying concept. The PIDACS instruments were carefully selected from those used in previous studies, including the UEY pilot studies and the National Longitudinal Survey of Children and Youth, to ensure that they are valid measures with high reliability.

The interpretation of each community's PIDACS results is strengthened by comparing the results to the Canadian average. The Canadian average for each indicator was estimated with PIDACS data collected in the first 21 UEY communities in 2006-07 (a total sample of 8,834 children). The socio-economic composition of the full set of these 21 UEY communities (based on family income, years of education and types of occupations) is very similar to that of the Canadian population of families with young children, based on 2006 Canadian Census data. However, to strengthen the comparisons, a design weight was constructed to increase the accuracy of the PIDACS UEY-21 estimates as national norms.

In statistical analysis of survey data, weighting is often applied to make the sample more like the population under study. The weighting process to make the UEY-21 data representative of the Canadian population was achieved by linking the UEY-21 data to the 2006 Canadian Census data using geographic information, derived from postal codes, that exists on both sets of data. The weights were constructed such that the weighted UEY-21 data have the same distribution of socio-economic characteristics as the full population of Canadian children. These design weights were then used in estimating the national averages of each PIDACS indicator. These approximated national averages are used for comparative purposes in this report, referred to as 'Canadian PIDACS average' or denoted as 'Canada (PIDACS)' in the tables and graphs.

The use of PIDACS to provide information to communities has a number of strengths, but it also has some limitations. The survey provides reliable and valid information on children's cognitive, behavioural and health outcomes, and a wide range of family, neighbourhood and community factors for each community. The results can be easily interpreted, and used in conjunction with the *Community Mapping Report* to develop the *Community Action Plan*.

However, PIDACS cannot measure in detail all aspects of children's outcomes, as the administration time for the three direct assessments was about 30 minutes, which is appropriate for children this age. The PIDACS parent interview is very extensive, but it too cannot cover all aspects of family and community life. Another limitation is that the sample size for each UEY community is not sufficiently large to accurately determine which family and community factors have the strongest relationship with the various developmental outcomes. An analysis of these relationships will be provided in an integrated report that uses data from communities funded in 2005 and 2007.

Finally, UEY is a descriptive study designed to provide a rich description of the family and community factors that affect childhood outcomes. Research aimed at understanding the causal relationships between these factors and childhood outcomes requires longitudinal studies that follow children over several years, such as the National Longitudinal Survey of

Children and Youth and Ontario's Better Beginnings Better Futures Program, [3] and studies that involve the random assignment of communities to treatment and control groups.

The PIDACS data collection was conducted by an independent contractor, R. A. Malatest & Associates Ltd., hired by Human Resources and Skills Development Canada. The collection was done in collaboration with participating parents, school boards, schools, and local UEY staff. The analysis of the data and the preparation of the reports were sub-contracted by R.A. Malatest & Associates Ltd. to KSI Research International Inc., which was responsible for analysing the data and writing community-specific research reports for each of the UEY communities. This report is one of these.

Another key piece of information for this community was collected from kindergarten teachers, who provided their perceptions of children's development using the *Early Development Instrument (EDI).* Teachers completed the checklist between February and March 2009. The EDI provides information at a group level for five domains of children's development: physical health and well-being; social competence; emotional health and maturity; language and cognitive development; and communication skills and general knowledge. The instrument was developed by the Offord Centre for Child Studies at McMaster University in Hamilton, Ontario.

The 2009 EDI collection for Burnaby was carried out by the Human Early Learning Partnership (HELP) at the University of British Columbia, as part of an initiative of the Government of British Columbia. Through a contract with HELP, the Burnaby UEY project was provided with EDI results which will be presented in their community mapping report and will inform the development of their action plan; however, the EDI results are not included in this report.

[3] Peters, R. DeV., Arnold, R., Petrunka, K., Angus, D. E., Brophy, K., Burke, S. O., Cameron, G., Evers, S., Herry, Y., Levesque, D., Pancer, S. M., Roberts-Fiati, G., Towson, S., & Warren, W. K. (2000). *Developing Capacity and Competence in the Better Beginnings, Better Futures Communities: Short-Term Findings Report*. Kingston, Ontario: Better Beginnings, Better Futures Research Coordination Unit.

D. PORTRAIT OF THE KINDERGARTEN CHILDREN'S FAMILIES

PIDACS includes a number of measures of the family backgrounds of the children in the study. Factors which have been found to be relevant to many children's outcomes in other studies include family income, the level of education of the parents, the employment status of the parents, and family structure. In addition, the survey also includes variables indicating immigrant status and Aboriginal background. These factors are discussed below, comparing the Burnaby results for family income, parents' employment, parents' level of education, and family structure to the Canada averages derived from the UEY-21 PIDACS data. Other demographic characteristics are compared to the national average derived from the 2006 Canadian Census.

Family Income

National research based on the National Longitudinal Survey of Children and Youth indicates that family income has an influence on children's developmental outcomes. The results for receptive vocabulary among 4- and 5-year-olds suggest that the relationship is curvilinear, with scores increasing steadily for families with annual incomes between $10,000 and $30,000; however, for annual incomes above $30,000, the relationship is relatively weak.[4] Results from the 2006 Canadian Census indicate that 15.1% of Canadian children were living in families with annual incomes below $30,000. The median total income of Canadian two-parent families with both parents working was $79,100, while for single-parent, female-headed households it was $30,400. Several studies have examined the effects of living in low-income families, and have compared the effects on children when they are in their pre-school years versus when they are older. The results suggest that the risk associated with living in a low-income family increases with the length of time a family is in poverty,[5] and that generally the effect during the early years is more detrimental to children than during their primary or secondary school years.[6]

The median family income of the families in the Burnaby PIDACS sample was $70,000, which was lower than the Canadian PIDACS median of $73,800. (The average income for the PIDACS is not reported on as the sample means can be strongly influenced by outliers.) About 18% of the children in the Burnaby sample were living in families with annual incomes below $30,000. The Canadian PIDACS average was 16%.

Family income is not the sole determinant of children's developmental outcomes, but children living in poor economic circumstances often face challenges in the behavioural and learning domains when they begin school.

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[4] Willms, J. D. (2002). Socioeconomic gradients for childhood vulnerability. In J. D. Willms (Ed.), *Vulnerable Children: Findings from Canada's National Longitudinal Survey of Children and Youth* (pp. 71-102). Edmonton, Alberta: The University of Alberta Press.

[5] Duncan, G. J., Brooks-Gunn, J., & Klebanov, P. K. (1994). Economic deprivation and early child development. *Child Development*, *65*, 296-318.

[6] McLeod, J. D. & Nonnemaker, J. M. (2000). Poverty and child emotional and behavioral problems: Racial/ethnic differences in processes and effects. *Journal of Health and Social Behavior*, *41*(2), 137-161.

Parents' Employment

National findings from the National Longitudinal Survey of Children and Youth showed that children's behavioural and health outcomes are unrelated to parental employment, after controlling for other family demographic factors, such as income and parental education. However, children's level of receptive vocabulary is related to mothers' employment; children whose mothers were unemployed were more likely to have low receptive vocabulary scores.[7] For mothers, there appears to be a trade-off: mothers who are not employed have more time to be engaged with their child, but they are also more likely to experience depression.[8] Later in this report, results describing levels of parental engagement and maternal depression are presented.

In Burnaby, 40% of the mothers surveyed were not employed. This was higher than the Canadian PIDACS percentage (33%). Respondents also reported that 7% of the fathers of kindergarten children in Burnaby were not employed, which was also higher than the Canadian PIDACS percentage (6%).

The implications of these findings can only be considered in the greater socio-economic context, the effects of which play out differently for every family.

Parents' Level of Education

Several studies have found a significant relationship between levels of parents' education and a wide range of developmental outcomes.[9] During the early years of a child's life, the level of the mother's education plays a more prominent role in children's language development than does that of the father, but the effects of the father's education become important for school achievement after the child starts school.[10]

Only 3% of the mothers and 3% of the fathers surveyed in Burnaby reported that they had not completed secondary school. The Canadian PIDACS average for the mothers of kindergarten children not completing secondary school was 5%; for fathers it was 7%.

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[7] Brownell, M. & Willms, J. D. (2008). Early predictors of childhood outcomes at school entry. A paper in the HRSDC series, *Successful Transitions*. Ottawa: HRSDC.

[8] Dahinten, V. S. & Willms, J. D. (2002). Maternal depression and childhood vulnerability. In J. D. Willms (Ed.), *Vulnerable Children: Findings from Canada's National Longitudinal Survey of Children and Youth* (pp. 211-228). Edmonton, Alberta: The University of Alberta Press.

[9] Bradley, R. H. & Corwyn, R. F. (2002). Socioeconomic status and child development. *Annual Review of Psychology*, *53*, 371-399.

[10] Willms, J. D. (2002). Socioeconomic gradients for childhood vulnerability. In J. D. Willms (Ed.), *Vulnerable Children: Findings from Canada's National Longitudinal Survey of Children and Youth* (pp. 71-102). Edmonton, Alberta: The University of Alberta Press.

Family Structure

According to results from parents' reports in PIDACS, about 15% of Canadian families with young children were headed by a single parent, usually the mother. Approximately 10% of the children in the Burnaby sample were living in single-parent families.

Single mothers tend to be at increased risk of various physical and mental health problems and are more likely to have low levels of education. Many single-parent families also experience prolonged periods of low income. Several large-scale studies have found negative effects on children's outcomes associated with growing up in a single-parent family, but these effects are largely attributable to low levels of income and education.[11] One of the problems often experienced by single parents, for example, is a lack of resources and transportation for their children to participate in sports and recreational programs.

About 17% of the children in the Burnaby sample did not have any brothers or sisters, while 60% had one sibling, and 23% had at least two siblings. The average number of siblings in the Burnaby sample was 1.1; the Canadian PIDACS average was 1.3 siblings.

Other Demographic Characteristics

About 3.4% of the children in the PIDACS sample for Burnaby were of Aboriginal background. About 3.8% of Canadians were of Aboriginal background based on the 2006 Canadian Census. As the number of Aboriginal children in the sample was quite small, this factor is not considered further in this report.

Twenty percent of the children in the Burnaby PIDACS sample were immigrants, or born outside Canada. Results from the 2006 Canadian Census indicate that about 11% of the families in this community were recent immigrants who had immigrated between 2001 and 2006, while the national rate was 3.6%.

In about 55% of the families in the Burnaby PIDACS sample, English was the language that the mother and father learned at home during childhood. In another 2% of the families, French was the childhood language of at least one parent. In 43% of the families, the parents spoke a language other than English or French during their childhood.

[11] Strohschein, L., Tramonte, L. & Willms, J. D. (2009). The effects of divorce and separation on children's developmental outcomes. Research monograph in the Successful Transitions series. Ottawa: Human Resources and Skills Development Canada.

II

HOW ARE CHILDREN DOING IN BURNABY?

II. HOW ARE CHILDREN DOING IN BURNABY?

A. DEVELOPMENTAL OUTCOMES IN EARLY CHILDHOOD

The research on child development has provided guidance on the developmental outcomes that are most important at various stages of development. Efforts to monitor early childhood outcomes have emphasized developmental outcomes in five domains: (1) physical well-being and motor development, (2) social and emotional development, (3) approaches to learning, (4) language development, and (5) cognition and general knowledge.[12] This framework is consistent with the priorities of UNICEF, which include healthy growth and development, less disease and fewer illnesses, thinking and language skills, emotional and social skills, and self esteem.[13]

Most young Canadian children are healthy, exhibiting low rates of infant and childhood mortality and morbidity.[14] Among pre-school children, asthma is a prominent health concern, which, along with other chronic health problems, contributes to respiratory illness. Allergies, chronic ear infections, and health problems stemming from injuries also affect many Canadian children. The prevalence of childhood obesity has increased dramatically in the past two decades and has recently been recognized as a major health problem in Canada for children during the pre-school years.[15, 16]

Aside from indicators of children's health status, the domain of physical well-being also includes children's gross and fine motor development. Gross motor development pertains to children's use of large muscle groups to walk, sit, stand and run. Fine motor development refers to the use of their hands to eat, draw, print, write and perform many other detailed activities. By age five, most children can balance on one foot, hop, and do somersaults, as well as copy shapes, draw a person, and print some letters. Children vary in their rate of development of fine and gross motor skills, but substantially poor development can indicate that a child may require medical attention or other special services.[17]

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[12] Willms, J. D. & Beswick, J. F. (2005). *Early Years Evaluation - Teacher Assessment: Revised*. Fredericton, New Brunswick: Canadian Research Institute for Social Policy.

Rhode Island Kids Count (2005). Getting Ready: Findings from the National School Readiness Indicators Initiative, A 17-State partnership. Available on-line: http://www.gettingready.org/matriarch/MultiPiecePage.asp_Q_PageID_E_318_A_PageName_E_NationalSchoolReadinessIndicat.

[13] UNICEF (2002). *UNICEF's priorities for children, 2002-2005*. New York: UNICEF.

[14] Canadian Institute of Child Health (2000). *The Health of Canada's Children: A CICH profile.* Ottawa: Canadian Institute of Child Health.

[15] Tremblay, M., & Willms, J. D. (2000). Secular trends in body mass index of Canadian children. *Canadian Medical Association Journal, 163*(11), 1429-1433.

[16] Canning, P. M., Courage, M. L., Frizzell, L. M. (2004). Prevalence of overweight and obesity in a provincial population of preschool children. *Canadian Medical Association Journal*, *171*(3), 240-242.

Willms, J. D. (2004). Early childhood obesity: A call for early surveillance and preventive measures. *Canadian Medical Association Journal*, *171*(3), 243-244.

[17] Shelov, S. P. (ed.) (2004). *Caring for Your Baby and Young Child: Birth to Age 5*. Elk Grove Village, IL: American Academy of Pediatrics.

The domain of outcomes that measure social and emotional development includes positive social skills, such as children's ability to get along with other children, accept responsibility for their actions, and work independently. During the pre-school years, some children are physically aggressive more often than other children their age, and when children enter school, hyperactivity and inattention emerge as important behavioural problems.[18] The term 'approaches to learning' pertains to children's engagement in learning, and comprises such factors as enthusiasm, curiosity, and persistence in completing tasks.

The rate at which children acquire language differs considerably among children, even among those from the same family. During the 1970s and 80s, researchers were concerned with whether variation in early literacy skills was attributable mainly to differences in children's innate capacity, or to differences in their exposure to speech and language. The evidence indicated that hereditary effects are relatively weak: only about 10 to 12% of the variation in children's vocabulary scores was explained by parents' vocabulary scores.[19] Recent research that has examined children's vocabulary growth during the pre-school years suggests that about 20% of the variation is attributable to the quantity of the mother's speech and the frequency with which mothers use particular words.[20] It is also related to children's exposure to language in the home and to the nature of their interactions with their parents.[21]

Cognitive development includes the abilities to reason, understand relational concepts, build concepts, and work with mathematical concepts. During the pre-school years, these abilities are closely tied to children's language development. Together, language and cognitive development are key predictors of the rate at which children acquire reading skills in grades 1 and 2.[22] This, in the longer term, has important implications for their progress at school.

The PIDACS includes a broad range of outcome measures. These include three direct assessments of children's language, cognitive development and pre-literacy skills, as well as parents' assessments of pro-social behaviour, behavioural problems, and several aspects of physical health. The measures used in PIDACS are described below in three sections, one each for the cognitive, behavioural and health domains. Each section also provides the results for Burnaby on each assessment.

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[18] Tremblay, R. E., Nagin, D. S., Séguin, J. R., Zoccolillo, M., Zelazo, P. D., Boivin, M., Pérusse, D., & Japel, C. (2004). Physical Aggression During Early Childhood: Trajectories and Predictors. *Pediatrics*, *114*, 1, 43-50.

Willms, J. D. (2002). Socioeconomic gradients for childhood vulnerability. In J. D. Willms (Ed.), *Vulnerable Children: Findings from Canada's National Longitudinal Survey of Children and Youth* (pp. 71-102). Edmonton, AB: The University of Alberta Press.

[19] Scarr, S., & Weinberg, R. A. (1978). The influence of "family background" on intellectual attainment. *American Sociological Review*, *43*, 674-692.

[20] Huttenlocher, J., Haight, W., Bryk, A., Seltzer, M., & Lyons, T. (1991). Early vocabulary growth: Relation to language input and gender. *Developmental Psychology*, *27*(2), 236-248.

[21] Hart, B., & Risley, T. R. (1995). *Meaningful differences in the everyday experience of young American children*. Baltimore: P. H. Brookes.

[22] Scarborough, H. S. (1998). Early identification of children at risk for reading disabilities: Phonological awareness and some other promising predictors. In B. K. Shapiro, A. J. Capute, & B. Shapiro (Eds.), *Specific reading disability: A view of the spectrum* (pp. 77–121). Hillsdale, NJ: Erlbaum.

Schatschneider, C., Fletcher, J. M., Francis, D. J., Carlson, C. D., & Foorman, B. R. (2004). Kindergarten prediction of reading skills: A longitudinal comparative analysis. *Journal of Educational Psychology*, *96*(2), 265-282.

B. DEVELOPMENTAL SKILLS

The PIDACS includes three measures of children's developmental skills.

Receptive Vocabulary. Children's language development was assessed with the *Peabody Picture Vocabulary Test, Revised – PPVT-R*, which assesses the vocabulary that children understand when they hear spoken words. This is called receptive vocabulary. The assessor says a word, and the child is asked to point to one of four pictures on an easel plate that corresponds to the word. The PPVT-R was used with English-speaking children and the Échelle de vocabulaire en images Peabody (EVIP) was used with French-speaking children. The PPVT-R was developed by Lloyd and Leota Dunn at the University of Hawaii, while the EVIP was developed by Claudia M. Thériault-Whalen at St. Thomas University in Fredericton, New Brunswick. The scores were scaled to have a mean of 100 and a standard deviation of 15 for the Canadian PIDACS sample.

Number Knowledge. The *Number Knowledge* assessment gauged children's intuitive knowledge of numbers by assessing their understanding of quantity (more versus less), their ability to count objects, their understanding of number sequence, and their ability to do simple arithmetic. The assessment was developed by Dr. Robbie Case and his colleagues at the Ontario Institute for Studies in Education at the University of Toronto. It is administered orally and the child must respond verbally without using paper or a pencil to figure out answers. The scores on this assessment were also scaled to have a mean of 100 and a standard deviation of 15 for the Canadian PIDACS sample.

Pre-literacy skills. An assessment of children's pre-literacy skills was based on the *Who Am I?*, which was developed by Dr. Molly de Lemos and her colleagues at the Australian Council for Educational Research. It is an assessment that involves various copying and writing tasks; for example, it assesses children's ability to conceptualize and to reconstruct geometrical shapes and to use symbolic representations, as illustrated by their understanding and use of conventional symbols such as numbers, letters and words. Children are asked to copy five shapes (such as a circle or a diamond) and to write their names, numbers, letters, words, and a sentence. As with the PPVT-R and Number Knowledge, these scores were scaled to have a mean of 100 and a standard deviation of 15 for the Canadian PIDACS sample.

Children with very low scores on the direct assessments used in PIDACS are at risk of experiencing slow development in their reading skills as they proceed through the primary grades. The choice of a cut-off score to define this vulnerability is rather arbitrary. For the Peabody Picture Vocabulary Test, a score of 85 is often set as the low-score threshold. Children with scores below 85 on the PPVT are at risk of experiencing difficulties learning to read,[23] and in Canada about 20% of children are then at risk of not making the critical transition from learning-to-read to reading-to-learn around Grade 3 or 4. In this study the low-score threshold was set at 85, which is about one standard deviation below the mean, for all three PIDACS direct assessment measures.

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[23] Speece, D. L., Ritchey, K. D., Cooper, D. H., Roth, F. P., Schatschneider, C. (2004). Growth in early reading skills from kindergarten to third grade. *Contemporary Educational Psychology*, *29*, 312-332.

TABLE 2-1. Mean scores on the direct assessments of kindergarten children

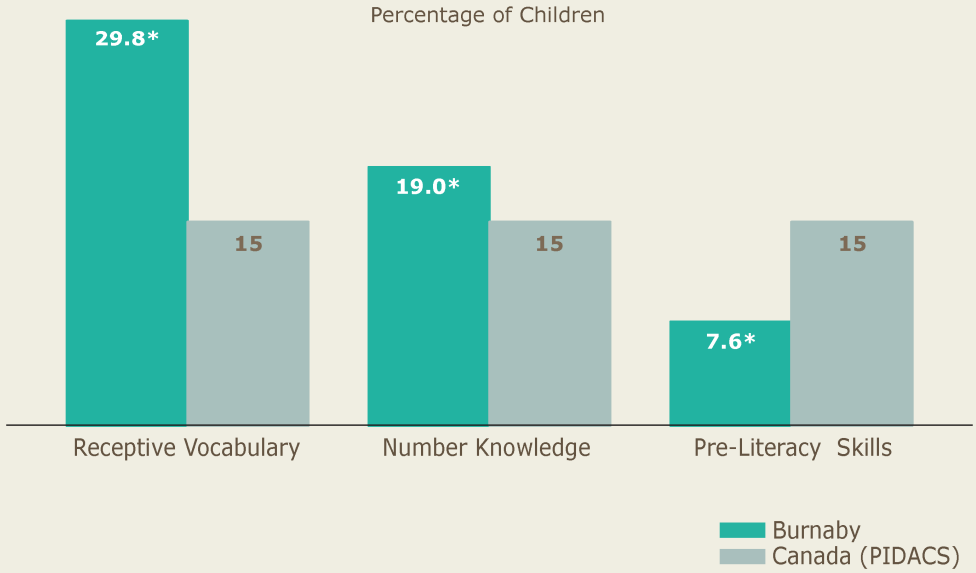
	Burnaby		Canadian Average (PIDACS)	
	Mean	**S.D.**	**Mean**	**S.D.**
Receptive Vocabulary	**94.2**	16.7	100.0	15.0
Number Knowledge	99.4	15.5	100.0	15.0
Pre-Literacy Skills	**103.8**	13.1	100.0	15.0

Note: Figures in bold text differ significantly from the Canadian PIDACS average.

Source: PIDACS, 2006-07 (Canada) and 2008-09 (Burnaby).

Table 2-1 depicts the average scores on the direct assessments for the participating children. The children of Burnaby had an average score of 94.2 on the assessment of receptive vocabulary. This was below the Canadian PIDACS average. (See discussion regarding the Canadian PIDACS average on page I-8). The average score on the assessment of number knowledge was 99.4, which was comparable to the Canadian PIDACS average. On the assessment of pre-literacy skills, the children of Burnaby had an average score of 103.8, which was higher than the Canadian PIDACS average.

FIGURE 2-1. Kindergarten children with low scores on the direct assessments



Note: Statistically significant differences are indicated with an asterisk.
Source: PIDACS, 2006-07 (Canada) and 2008-09 (Burnaby).

Figure 2-1 shows the percentage of children in Burnaby with scores below 85 on the three direct assessments. About 30% of the children in this community had low scores on the assessment of receptive vocabulary. This prevalence of vulnerability was much higher than that seen in the Canadian PIDACS population. About 19% of the children in Burnaby had low scores on the assessment of number knowledge, which was also a higher percentage than in the Canadian PIDACS population. In contrast, on the assessment of pre-literacy skills, about 8% scored below 85, which was below the percentage in the Canadian PIDACS population.

C. BEHAVIOURAL OUTCOMES

PIDACS Assessments of Behavioural Outcomes Based on Parent Interviews

In PIDACS interviews, parents provided their perceptions on how their kindergarten child behaves at home and in the community. These yielded information on children's developmental outcomes that included a measure of positive social behaviour and four behavioural problems that are displayed by some children this age: inattention, anxiety, depression and physical aggression. Each scale is based on several questions; for example, the parent is asked how often his or her child cannot sit still or is restless, and answers with one of three possible responses: 'never'; 'sometimes'; or 'often'. The responses for each measure are assigned scores of 0, 1 or 2 for 'never'; 'sometimes'; or 'often', respectively, and averaged across the questions to create a scale ranging from 0 to 2. A child is considered to have a behavioural problem if he or she has a score that is *greater than* 1.0 on the relevant measure. On the measure of positive social behaviour, a child is considered to have 'low positive social behaviour' if he or she has a score that is *less than* or equal to 1.0.

Positive social behaviour. Children who exhibit higher levels of positive social behaviour are more likely to try to help and comfort others. They may offer to help pick up objects that another child has dropped or offer to help a child who is having trouble with a difficult task. They might also invite their peers to join in a game.

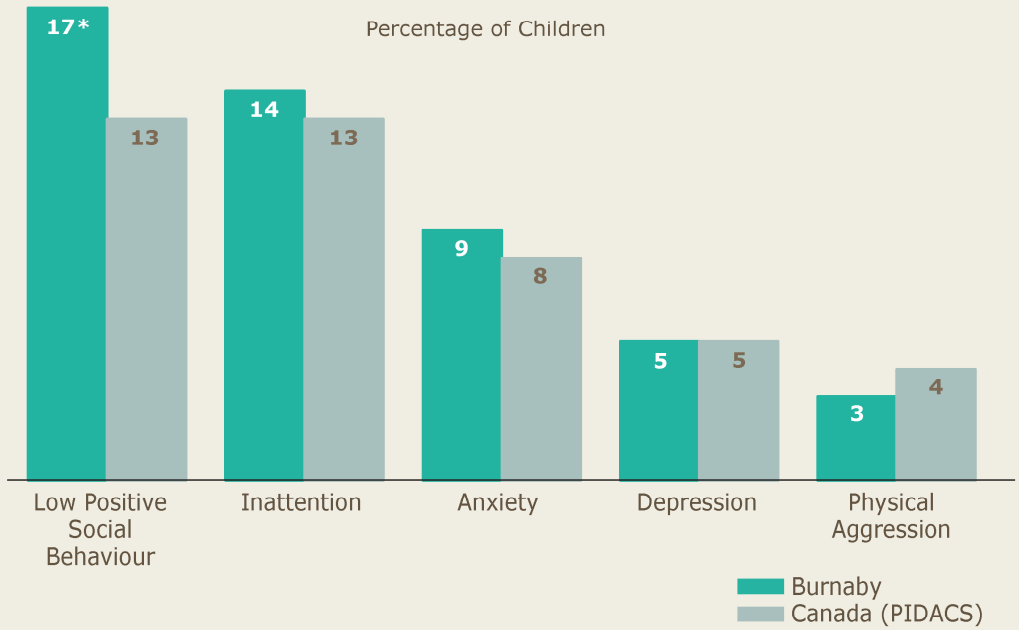
Inattention. Children who are inattentive tend to have trouble sitting still, are restless or easily distracted, have trouble sticking to any activity or concentrating for long periods, and may have difficulty waiting their turn in games or groups. Children who are considered 'hyperactive' often display these traits, but not all inattentive children are hyperactive.

Anxiety. Children with anxiety problems tend to be fearful, worried, or nervous and high-strung. Quite often they cry more than other children.

Depression. At this age, some children also display depressive symptoms, such as being unhappy or sad more often than other children, or having trouble enjoying activities.

Physical aggression. Children at age five can on occasion be hostile or aggressive towards others. However, some children are aggressive more often than others. For example, if another child accidentally hurts them, they assume that the other child meant to do it, and then react with anger and fighting. Some children at this age also physically attack others or threaten them, or they are cruel and bully other children.

FIGURE 2-2. Kindergarten children with low positive social behaviour and behavioural problems



Note: Statistically significant differences are indicated with an asterisk.
Source: PIDACS, 2006-07 (Canada) and 2008-09 (Burnaby).

Figure 2-2 shows the proportion of children with low scores on the measures of positive social behaviour, and data for the four types of behavioural problems, based on the reports of parents in the PIDACS interview. In Burnaby, a greater proportion of children displayed low positive social behaviour than was the case among their Canadian PIDACS counterparts (17% locally as opposed to 13% nationally). About 14% of the children in the community had problems with inattention, 9% displayed high levels of anxiety, 5% displayed depressive symptoms, and 3% were physically aggressive; these results were not significantly different from the corresponding Canadian PIDACS averages.

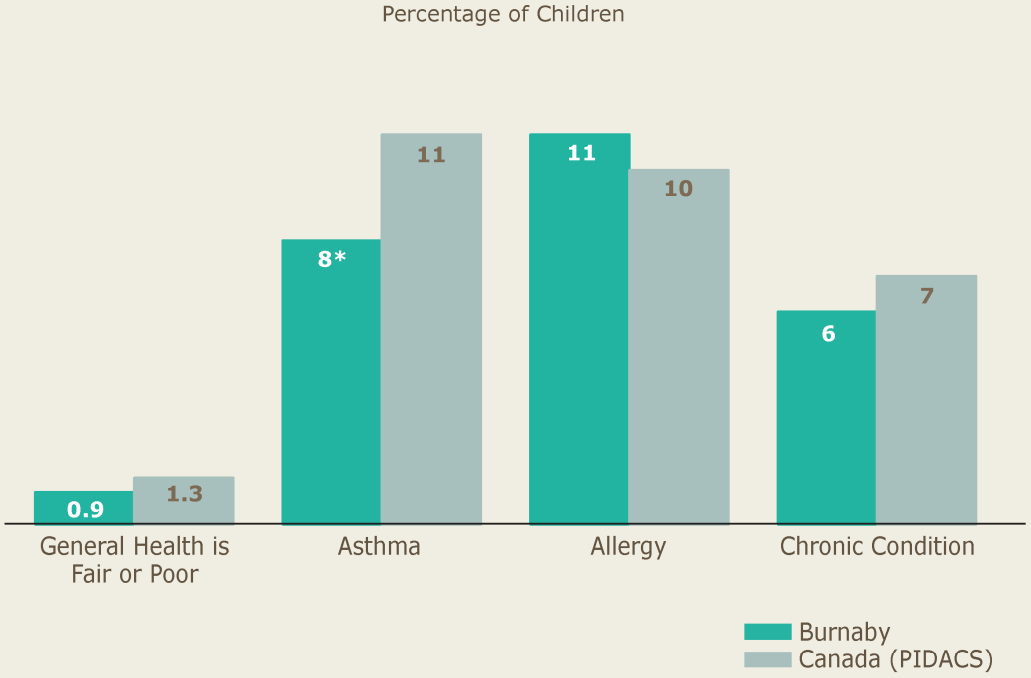
D. HEALTH OUTCOMES

PIDACS Assessments of Health Outcomes Based on Parent Interviews

During the PIDACS interview the parent provided information on the general health of his or her child, and indicated whether the child had any physical, mental or health problems that limited his or her child's activities. This included only health conditions or problems that had lasted or were expected to last for at least six months. The parent was also asked if the child had a respiratory problem, such as hay fever or asthma; any food, digestive or other allergies; or chronic conditions other than asthma or allergies, such as heart problems, epilepsy, cerebral palsy, or a kidney condition.

Figure 2-3 shows that in Burnaby, less than 1.0% of the children were considered to be in fair or poor health by their parents. The prevalence of children with asthma was 8%, which was lower than the Canadian PIDACS average. The proportions of children with allergies and other chronic health problems were 11% and 6%, respectively, which were comparable to the corresponding Canadian PIDACS averages.

FIGURE 2-3. Kindergarten children with health problems



Note: Statistically significant differences are indicated with an asterisk.
Source: PIDACS, 2006-07 (Canada) and 2008-09 (Burnaby).

E. INEQUALITIES IN OUTCOMES

Table 2-2 provides information on inequalities in outcomes between boys and girls and between sub-populations defined by the demographic factors described in the Introduction. For each group, it displays the prevalence of children with low scores on the three direct assessments of cognitive skills; with low scores on the measure of positive social behaviour; with the four types of behavioural problems; and with poor health outcomes. Differences between the sexes or sub-populations that are statistically significant ($p < 0.05$) are indicated with bold text. When cell size for a cross-tabulation is less than ten, the estimate is not shown.

In Burnaby, the most prominent inequalities in outcomes pertained to scores on the direct assessments. On the test of receptive vocabulary, children were more likely to have low scores if they were males or recent immigrants, or were living in low-income families, or families in which the mother or father was unemployed or the mother had not completed secondary school. For number knowledge the significant inequalities were associated with low family income and single-parent families, as well as the level of education of the mother. Boys were more likely than girls to have low pre-literacy skills, as were children whose fathers were unemployed. Boys were also more likely to have low positive social behaviour and display inattention. Physical health problems were more evident among low-income and single-parent families.

TABLE 2-2. Differences among Burnaby sub-populations in kindergarten children's developmental outcomes (% children)

	Cognitive			Behavioural					Health			
	Low Receptive Vocabulary	Low Number Knowledge	Low Pre-literacy Skills	Low Positive Social Behaviour	Inattention	Anxiety	Depression	Physical Aggression	Poor General Health	Asthma	Allergies	Chronic Condition
All Children	30	19	8	17	14	9	5	3	0.9	8	11	6
Child's Sex												
Girls	28	20	**3**	**13**	**9**	9	6	2	0.7	6	11	6
Boys	31	18	**12**	**21**	**18**	9	4	3	1.1	10	11	7
Family Income												
Below $30,000/year	**51**	**35**	10	15	18	15	6	3	**3.8**	10	14	6
At or above $30,000/year	**20**	**13**	7	15	12	8	5	3	**0.3**	8	11	6
Mothers' Employment												
Not employed	**32**	20	8	19	11	11	6	2	0.5	7	10	5
Employed	**22**	15	8	15	15	7	4	4	1.3	9	12	7
Fathers' Employment												
Not employed	**51**	24	**20**	22	9	3	3	0	0	3	0	8
Employed	**24**	15	**6**	18	13	8	5	3	0.7	7	11	6
Mothers' Education												
Did not complete secondary	**54**	**48**	7	15	23	10	8	0	0	0	7	7
Completed secondary	**26**	**17**	8	17	13	9	5	3	1.0	8	12	6
Fathers' Education												
Did not complete secondary	24	16	15	21	14	8	0	7	0	8	7	0
Completed secondary	26	16	7	18	13	8	5	2	0.6	7	11	7
Family Structure												
Single-parent family	25	**29**	11	10	17	**18**	8	6	**4.0**	**17**	16	4
Two-parent family	28	**16**	7	18	13	**8**	5	3	**0.6**	**7**	10	6
Immigrant Status												
Non-Immigrant	**21**	17	9	17	14	**10**	5	3	1.2	9	12	7
Immigrant	**48**	17	5	16	10	**2**	5	1	0	5	8	2

Note: Differences that are statistically significant ($p < 0.05$) are in bold text.
Source: PIDACS, 2008-09 (Burnaby).

III

FAMILY AND COMMUNITY SUPPORT FOR EARLY CHILDHOOD DEVELOPMENT

III. FAMILY AND COMMUNITY SUPPORT FOR EARLY CHILDHOOD DEVELOPMENT

A. FAMILY LIFE

Earlier research based on the National Longitudinal Survey of Children and Youth identified four factors that were strongly related to children's developmental outcomes: parenting skills, the cohesiveness of the family unit, the mental health of the mother, and the extent to which parents engage with their children.[24] The PIDACS included measures of these four key aspects of family life. The measures used and the results pertaining to Burnaby are described below.

Family Functioning and Maternal Depression

The concept of family functioning refers mainly to the cohesiveness and adaptability of the family. It concerns how well the family functions as a unit, not just the strength of the relationships between spouses or between parents and their children. A number of studies have shown that family functioning is related to children's developmental outcomes, especially children's behaviour.[25]

In this study, family functioning is assessed with 12 items pertaining to a family's ability to communicate, to make decisions and solve problems as a group, to discuss feelings and concerns, to get along together, and to feel accepted for whom they are. The total scores on the scale range from 0 to 36, with higher scores indicating a more positively functioning family. A cut-off score of 24 was used to denote families that had poor family functioning. About 10% of the families in the 21 UEY communities assessed with PIDACS in 2006-07 (i.e., the Canadian PIDACS data) scored below 24 on this scale.

According to Health Canada, about 5% to 7% of mothers experience depression after the post-partum period.[26] Depression is often accompanied by insomnia, emotional problems, anxiety, and feelings of guilt. These in turn can have adverse effects on a mother's interactions with her child, leading to poorer social and cognitive developmental outcomes.[27] Depression among fathers may also have adverse effects, but the number of fathers studied in earlier research based on UEY and the National Longitudinal Survey of Children and Youth was insufficient to estimate its effects.

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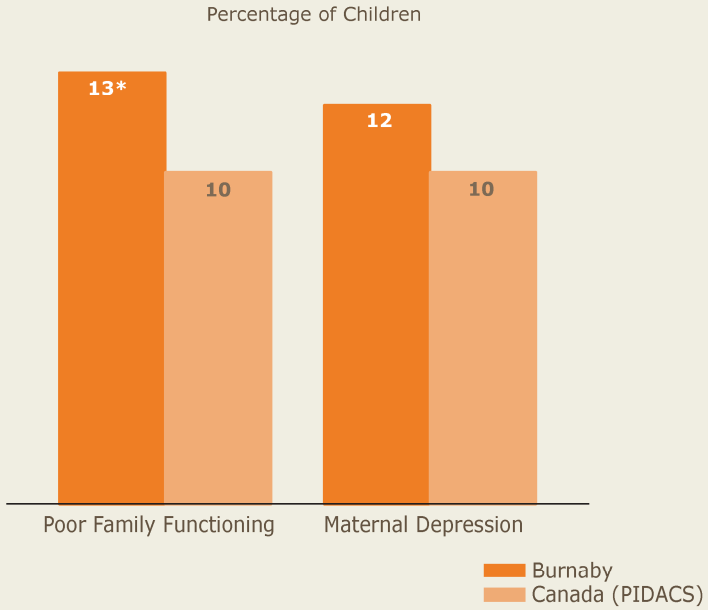
[24] Willms, J. D. (2002). Research findings bearing on Canadian Social Policy. In J. D. Willms, (Ed.), *Vulnerable Children: Findings from Canada's National Longitudinal Study of Children and Youth* (pp.331-58). Edmonton, AB: University of Alberta Press. (page 356)

[25] Racine, Y. & Boyle, M. H. (2002). Family functioning and children's behaviour problems. In J. D. Willms, (Ed.), *Vulnerable Children: Findings from Canada's National Longitudinal Study of Children and Youth* (pp. 199-210). Edmonton, AB: University of Alberta Press.

[26] Health Canada. (1999). Women's Health Strategy. Ottawa, ON: Bureau of Women's Health and Gender Analysis, Health Canada. Retrieved from the Health Canada Web site: www.hc-sc.gc.ca/english/women/womenstrat.htm

[27] Murray, L., & Cooper, P. (1997). Effects of postnatal depression on infant development. *Archives of Disease in Childhood, 72*(2), 99-101.

FIGURE 3-1. Percentage of families with poor family functioning and mothers with signs of depression in families with kindergarten children



Note: Statistically significant differences are indicated with an asterisk.
Source: PIDACS, 2006-07 (Canada) and 2008-09 (Burnaby).

The PIDACS interview included 10 items pertaining to maternal depression. Respondents were presented with a set of statements describing certain feelings and behaviours and asked to indicate how often they had felt or behaved that way during the previous week, for example, "I felt that I could not shake off the blues, even with help from my family or friends", "I felt lonely", and "I had crying spells". On such statements respondents who were mothers or female guardians would have indicated that they felt this way: "Rarely or none of the time (less than 1 day)", "Some or a little of the time (1-2 days)", "Occasionally or a moderate amount of the time (3-4 days)", and "Most or all of the time (5-7 days)". These answers were scored and then scaled on a four-point scale, with 0 denoting "Rarely or none of the time" and 3 denoting "Most or all of the time". In this report, a low-score cut-off of 0.75 was used to identify mothers who were displaying strong signs of depression. Using this cut-off of 0.75, it was found that about 10% of mothers in the Canadian PIDACS sample displayed such signs of depression. This prevalence was comparable to that seen in other studies, including the National Longitudinal Survey of Children and Youth.

Figure 3-1 shows the prevalence of families with poor family functioning and the prevalence of maternal depression. About 13% of the families in Burnaby had low scores on the measure of family functioning, which was above the Canadian PIDACS average. Twelve per cent of the mothers were displaying strong signs of depression, which was comparable to the Canadian PIDACS average. (See discussion regarding the Canadian PIDACS average on page I-8).

Table 3-1 depicts differences among sub-populations of Burnaby in the prevalence of families with poor family functioning and maternal depression. As shown in the table, the

prevalence of poor family functioning was 30% among low-income families, while it was only 11% in families with incomes above $30,000. Low-income families and families in which the mother was unemployed were more likely to be experiencing poor family functioning. Mothers were more likely to be experiencing depression if they were in low-income families or unemployed, or if their spouses had low levels of education.

TABLE 3-1. Differences among Burnaby sub-populations in maternal depression and poor family functioning in families with kindergarten children (% children)

	Poor Family Functioning	Maternal Depression
All Children	13	12
Child's Sex		
Girls	13	12
Boys	14	11
Family Income		
Below $30,000/year	**30**	**28**
At or above $30,000/year	**11**	**9**
Mothers' Employment		
Not employed	**18**	**16**
Employed	**11**	**8**
Fathers' Employment		
Not employed	11	21
Employed	13	11
Mothers' Education		
Did not complete secondary	16	18
Completed secondary	13	11
Fathers' Education		
Did not complete secondary	20	**31**
Completed secondary	12	**11**
Family Structure		
Single-parent family	22	15
Two-parent family	12	11
Immigrant Status		
Non-Immigrant	14	11
Immigrant	9	15

Note: Differences that are statistically significant ($p < 0.05$) are in bold text.

Source: PIDACS, 2008-09 (Burnaby).

Parenting Practices

A number of studies have shown that children have better developmental outcomes when parents are loving and responsive to their child's needs and socialize their child by making demands for mature behaviour and by supervising their child. In PIDACS, parents answered 14 questions that were used to develop scales for these two critical dimensions of parenting practices.

***Love and Support**:* This scale measures the extent to which parents are loving, responsive to the child's needs, and recognize the child's individuality. Parents who are loving and supportive tend to praise their children more, and are warm and expressive. Parents would score low on this measure if they tended to be harsh with their children, neglectful, or detached.

***Authority**:* This scale measures parents' efforts to socialize their child into the family and society by supervising the child, making demands for mature behaviour, and demanding compliance. Parents scoring high on this scale tend to set boundaries and expectations. They consistently reinforce behaviour that is 'in bounds', and when their child is 'out of bounds' they guide him or her towards appropriate behaviour. These parents would be intolerant of misbehaviour, but not over-controlling.

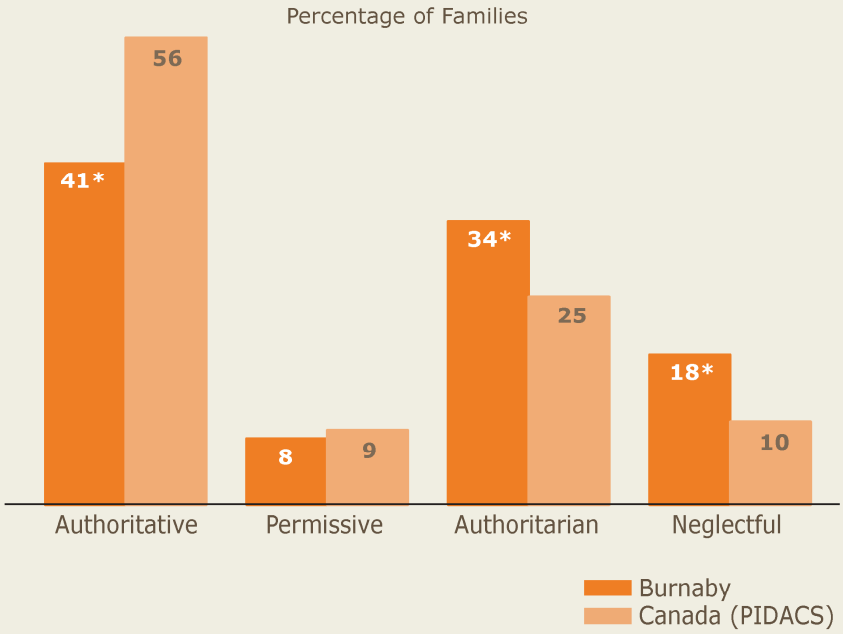
As illustrated in Table 3-2, these two constructs are commonly used in a typology of parenting styles, which classifies parents in terms of their responses to the needs of children for nurturance and supervision.[28]

TABLE 3-2. Typology of parenting styles as a function of "Love and Support" and "Authority"

		Love and Support	
		High	*Low*
Authority	*High*	**Authoritative**	**Authoritarian**
	Low	**Permissive**	**Neglectful**

[28] Baumrind, D. (1991). The influence of parenting style on adolescent competence and substance abuse. *Journal of Early Adolescence, 11*(1), 56-95.

FIGURE 3-2. Parenting styles of parents with kindergarten children



Note: Statistically significant differences are indicated with an asterisk.
Source: PIDACS, 2006-07 (Canada) and 2008-09 (Burnaby).

Parents who score high on both dimensions of parenting are considered 'authoritative' parents. Several studies, including studies based on the National Longitudinal Survey of Children and Youth have shown that children of these parents have better developmental outcomes.[29] In contrast, parents who are loving and supportive but lack authority are considered 'permissive', while those who display authority but are less loving and supportive are considered 'authoritarian'. Parents who are less loving and responsive and do not adequately monitor their children's behaviour are referred to as 'neglectful'. Based on their scores on the measures of 'love and support' and 'authority', parents were classified as authoritative, permissive, authoritarian, or neglectful. With this classification, about 56% of Canadian parents (PIDACS 2006-07) were authoritative, 9% were permissive, 25% were authoritarian, and 10% were neglectful.

Figure 3-2 shows the percentage of families in each of the four categories for Burnaby compared with the national average. About 41% of Burnaby's parents were considered authoritative, which was below the Canadian PIDACS average. The percentages of families reporting an authoritarian or neglectful style was above the Canadian PIDACS average.

[29] Chao, R. K. & Willms, J. D. (2002). The effects of parenting practices on children's outcomes. In J. D. Willms, (Ed.), *Vulnerable Children: Findings from Canada's National Longitudinal Study of Children and Youth* (pp. 149-165). Edmonton, AB: University of Alberta Press.

Other research, including research based on the National Longitudinal Survey of Children and Youth, has also shown that parental engagement with children in such activities as reading to them, playing games with them, or simply talking and laughing with them has positive effects on their development. In PIDACS, parents were asked a number of questions on engagement with their children. The best marker of engagement, in terms of its relationship to children's development, is the amount of time parents spend reading to their child. In contrast, time spent watching television or videos takes away from time spent doing constructive activities; excessive amounts can have a detrimental effect on children's outcomes.

In Burnaby, 76% of the parents read to their child at least once every day. This was comparable to the Canadian PIDACS average of 77%. On average, the kindergarten children spent 1.8 hours per day watching television, which was higher than the Canadian PIDACS average of 1.6 hours.

Table 3-3 depicts differences among sub-populations in Burnaby in the percentage of parents displaying authoritative parenting practices, the percentage reading to their child at least once a day, and the average time spent watching television or videos. There were relatively few differences among sub-populations in these measures. Single parents were more likely to display an authoritative parenting style. Children in low-income families and children in families in which the father had not finished secondary school or was unemployed were less likely to be read to every day. On average, boys spent more time watching television than girls. As well, children whose fathers had not finished secondary school also spent more time watching television.

TABLE 3-3. Differences among Burnaby sub-populations in parenting practices (authoritative style, reading to child, and child watching television or videos) in families with kindergarten children

	Authoritative Style (% children)	Reads to Child at Least Once a Day (% children)	Child Watching Television or Videos (hours)
All Children	41	76	1.8
Child's Sex			
Girls	42	74	**1.6**
Boys	39	77	**1.9**
Family Income			
Below $30,000/year	34	**64**	1.8
At or above $30,000/year	42	**79**	1.7
Mothers' Employment			
Not employed	36	79	1.8
Employed	43	74	1.8
Fathers' Employment			
Not employed	37	**52**	2.0
Employed	39	**76**	1.7
Mothers' Education			
Did not complete secondary	32	61	2.0
Completed secondary	41	76	1.8
Fathers' Education			
Did not complete secondary	42	**50**	**2.6**
Completed secondary	39	**76**	**1.7**
Family Structure			
Single-parent family	**60**	80	1.7
Two-parent family	**39**	75	1.8
Immigrant Status			
Non-Immigrant	41	77	1.8
Immigrant	41	70	1.7

Note: Differences that are statistically significant ($p < 0.05$) are in bold text.

Source: PIDACS, 2008-09 (Burnaby).

TABLE 3-4. Parents' engagement with their kindergarten children and their children's literacy activities (% children)

	Burnaby	Canada (PIDACS)
Parent does the following activities with the child at least once every day		
Encourages him or her to use numbers in daily activities	**60**	71
Teaches him or her to read words	**54**	63
Tells stories	**53**	61
Takes him or her outside to play	**36**	47
Watches television with him or her	**39**	47
Teaches him or her to print letters or numbers	**38**	46
Sing songs (including action songs)	**36**	41
Plays cards or board games	9	9
Child does the following activities at least once every day		
Plays with pencils or markers doing real or pretend writing	70	72
Reads or tries to read	68	71
Looks at books, magazines, comics, etc. on his or her own	**69**	63
Does puzzles	**7**	10

Note: Differences that are statistically significant ($p < 0.05$) are in bold text.
Source: PIDACS, 2006-07 (Canada) and 2008-09 (Burnaby).

Table 3-4 shows the percentage of parents who were engaged with their child doing various activities at least once every day. For seven of the eight activities parents in Burnaby were less engaged than their Canadian PIDACS peers. The one exception was playing cards or board games, which was comparable to the average. With respect to literacy-related activities, children in Burnaby tended to look at reading materials more often, but they did puzzles less often than the Canadian PIDACs population.

TABLE 3-5. Differences among Burnaby sub-populations in parents' engagement with their children and kindergarten children's literacy activities (% children)

	Parents' Engagement with Child								Child's Activities			
	Encourages Use of Numbers	Teaches to Read Words	Tells Stories	Takes Outside to Play	Watches Television	Teaches Printing	Sings Songs	Plays Games	Does Real or Pretend Writing	Reads or tries to Read	Looks at Books, Etc.	Does Puzzles
All Children	60	54	53	36	39	38	36	9	70	68	69	7
Child's Sex												
Girls	59	54	54	32	37	40	**43**	7	**84**	**77**	**79**	8
Boys	61	53	52	39	41	36	**29**	11	**54**	**58**	**59**	6
Family Income												
Below $30,000/year	50	50	**40**	28	36	35	29	9	74	68	66	10
At or above $30,000/year	61	55	**55**	37	38	39	37	8	69	65	68	6
Mothers' Employment												
Not employed	56	58	**59**	39	40	40	34	**14**	70	70	71	8
Employed	62	52	**49**	34	38	37	37	**5**	69	65	68	6
Fathers' Employment												
Not employed	59	43	44	27	42	30	37	8	58	55	65	8
Employed	61	54	53	35	39	39	34	9	70	67	69	7
Mothers' Education												
Did not complete secondary	**30**	55	37	32	38	23	26	0	64	63	63	**24**
Completed secondary	**61**	54	53	36	40	38	37	9	70	68	69	**7**
Fathers' Education												
Did not complete secondary	44	37	29	55	48	44	20	7	78	58	73	**30**
Completed secondary	61	53	54	35	39	38	35	9	69	67	69	**6**
Family Structure												
Single-parent family	57	61	45	40	32	37	**51**	8	74	73	73	13
Two-parent family	60	53	53	35	40	38	**35**	9	69	67	69	7
Immigrant Status												
Non-Immigrant	60	53	51	**38**	38	37	38	**7**	69	68	68	7
Immigrant	60	57	59	**27**	44	43	32	**15**	74	65	75	9

Note: Differences that are statistically significant ($p < 0.05$) are in bold text.

Source: PIDACS, 2008-09 (Burnaby).

Table 3-5 displays differences among sub-populations in Burnaby in the percentage of parents engaged in various activities with their child at least once every day, and the percentage of children that were engaged in literacy activities at least once every day. There were very few significant differences among sub-populations. The most noteworthy differences pertained to the sex of the child; parents with girls were more likely to sing songs to their child than those with boys, and similarly girls were more likely than boys to do real or pretend writing, read or try to read, or look at books or other reading materials.

B. CHILDREN'S PARTICIPATION IN COMMUNITY ACTIVITIES

PIDACS included a number of questions regarding the nature of children's activities and the family and children's use of community resources. The neighbourhood and the wider community are the centre of most young children's lives outside the family home. They provide opportunities for children to play, meet friends, and interact with adults. Although research on the effects of community resources has been quite limited, access to resources undoubtedly plays an important role in children's development.[30]

An important example is the opportunity to engage in sports activities in the local neighbourhood. Research on Canadian youth has found that children's involvement in unorganized sports is an important protective factor against childhood obesity, more so than participation in organized sports involving a coach or instructor. The amount of time children spend watching television and videos is a risk factor for childhood obesity.[31] In this case, the Canadian PIDACS average levels of participation in organized and unorganized sports activities are arguably not the best benchmarks; these levels of participation are considered too low by many researchers, such as those who compile the annual report card for Active Healthy Kids Canada. Similarly, researchers maintain that Canadian children spend too much time in front of a television or computer.[32]

Physical and Leisure Activity

Figure 3-3 shows the number of times per week that kindergarten children in Burnaby were engaged in sports and other activities. On average, they were engaged in organized sports that involve a coach or instructor about 1.6 times per week, which was higher than the Canadian PIDACS average of 1.4 times per week. They were engaged in unorganized sports at a rate comparable to the Canadian PIDACS average: 3.7 times per week compared to 3.8 times per week. Unorganized sports do not involve a coach or instructor, and thus can include many types of activities that children engage in such as running, skipping, swimming or sports activities in their neighbourhood. Although the overall level of activity of the children in this community was close to the Canadian PIDACS average, Canada's *Physical Activity Guide for Children* recommends that children gradually increase the amount of time spent in physical activity per day to 60 minutes of moderate physical activity and 30 minutes of vigorous activity.[33]

The participation rates of Burnaby children in art, music, and other cultural activities was comparable to the Canadian PIDACS average, as was participation in clubs, groups, and community programs, such as Beavers, Sparks, and church.

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[30] Connor, S. & Brink, S. (1999). *Understanding the Early Years – Community Impacts on Child Development.* Hull: Applied Research Branch, Strategic Policy. Human Resources and Skills Development Canada.

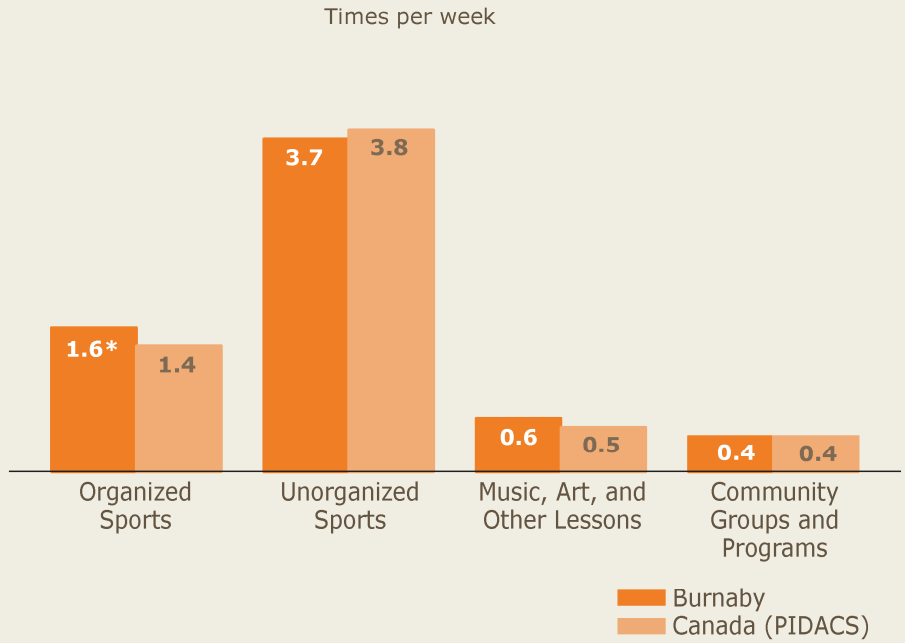
Hertzman, C. & Kohen, D. (2003). Neighbourhoods matter for child development. *Transitions, Autumn*, 3-5.

[31] Tremblay, M.S. and Willms, J.D. (2003). Is the Canadian childhood obesity epidemic related to physical inactivity? *International Journal of Obesity*, *27*(9), 1100-1105.

[32] Active Healthy Kids Canada (2007). *Older but not wiser: Canada's Future at Risk. Canada's Report Card on Physical Activity for Children and Youth – 2007*. Toronto: Active Healthy Kids Canada.

[33] Public Health Agency of Canada (2007). Canada's physical activity guides for children and youth. Online at: http://www.phac-aspc.gc.ca/pau-uap/paguide/child_youth/index.html.

FIGURE 3-3. Kindergarten children's participation in sports and other activities



Note: Statistically significant differences are indicated with an asterisk.
Source: PIDACS, 2006-07 (Canada) and 2008-09 (Burnaby).

Differences among sub-populations in participation in organized and unorganized sports are shown in Table 3-6. On average, boys in Burnaby were more frequently involved in organized sports than girls. Also, children in low-income families and children whose fathers were unemployed or whose mothers had not finished secondary school were less likely to be involved in organized sports. Immigrants were less likely to be involved in either organized or unorganized sports. Children in two-parent families were also less likely to be involved in unorganized sports.

TABLE 3-6. Differences among Burnaby sub-populations in kindergarten children's participation in sports (times per week)

	Organized Sports	Unorganized Sports
All Children	1.6	3.7
Child's Sex		
Girls	**1.3**	3.6
Boys	**1.8**	3.8
Family Income		
Below $30,000/year	**1.2**	3.7
At or above $30,000/year	**1.7**	3.8
Mothers' Employment		
Not employed	1.5	3.9
Employed	1.6	3.6
Fathers' Employment		
Not employed	**1.0**	3.2
Employed	**1.6**	3.7
Mothers' Education		
Did not complete secondary	**0.5**	3.5
Completed secondary	**1.6**	3.7
Fathers' Education		
Did not complete secondary	1.0	4.4
Completed secondary	1.6	3.6
Family Structure		
Single-parent family	1.4	**4.6**
Two-parent family	1.6	**3.6**
Immigrant Status		
Non-Immigrant	**1.7**	**3.8**
Immigrant	**1.1**	**3.2**

Note: Differences that are statistically significant ($p < 0.05$) are in bold text.

Source: PIDACS, 2008-09 (Burnaby).

Use of Community Resources

PIDACS asked parents a number of questions about their child's use of educational, entertainment, cultural and recreational resources in their community. The results give an indication of how often during the previous 12 months children used the following resources:

Educational Resources

- library or bookmobile, including the school library;
- book clubs and reading programs;
- family resource centres or drop-in programs;
- educational or science centres;

Entertainment and Cultural Resources

- sporting events, at local or professional venues;
- movies;
- museums, art galleries, or exhibits;
- plays or musical performances;

Recreational Resources

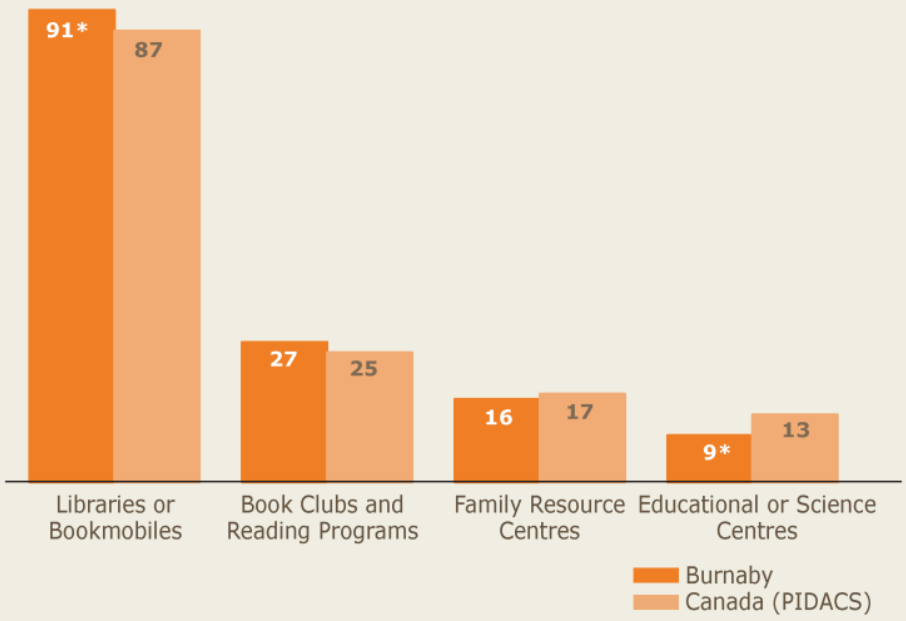
- parks, play spaces and recreational trails;
- beaches, indoor or outdoor pools, or wading pools;
- skating or hockey rinks or skiing facilities;
- recreational or community centres; and
- provincial or national parks and camping areas.

The availability of each type of educational, entertainment, cultural and recreational resource varies among communities, and, in some communities, the use of some resources was low because the resources were not readily available in the community.

Figures 3-4, 3-5 and 3-6 show the percentage of children in Burnaby that used these various kinds of resources.

FIGURE 3-4. Use of educational resources by kindergarten children

Percentage of children attending at least once per month

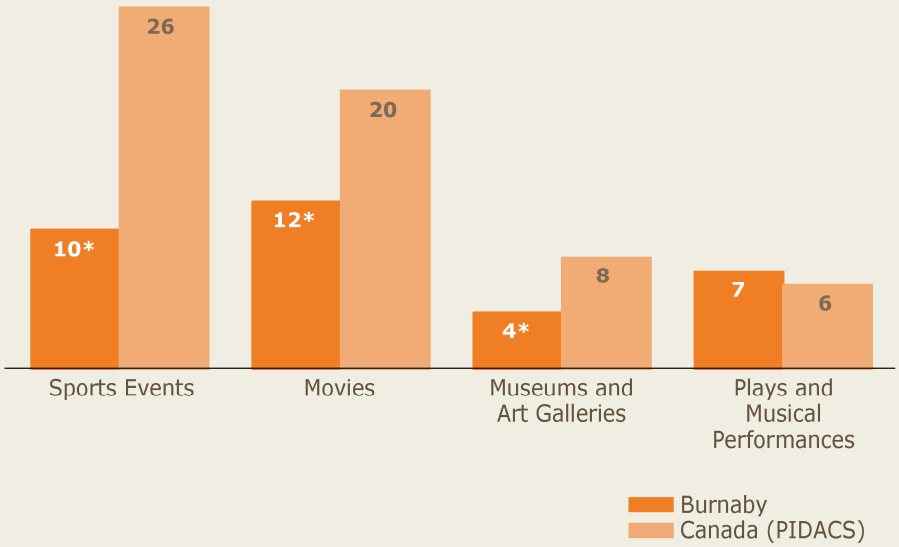


Note: Statistically significant differences are indicated with an asterisk.
Source: PIDACS, 2006-07 (Canada) and 2008-09 (Burnaby).

About 91% of the kindergarten children in Burnaby used a library or bookmobile at least once a month, which was above the Canadian average. Also, about 27% of the children frequently attended book clubs or were enrolled in reading programs with their parents. This was comparable to the Canadian PIDACS average. About 16% of the children in this community attended activities at a family resource centre at least once per month, which was comparable to the Canadian PIDACS average of 17%. Only about 9% of the children in Burnaby attended educational or science centres, which was lower than the frequency at which Canadian children this age participated in this kind of activity.

FIGURE 3-5. Use of entertainment and cultural resources by kindergarten children

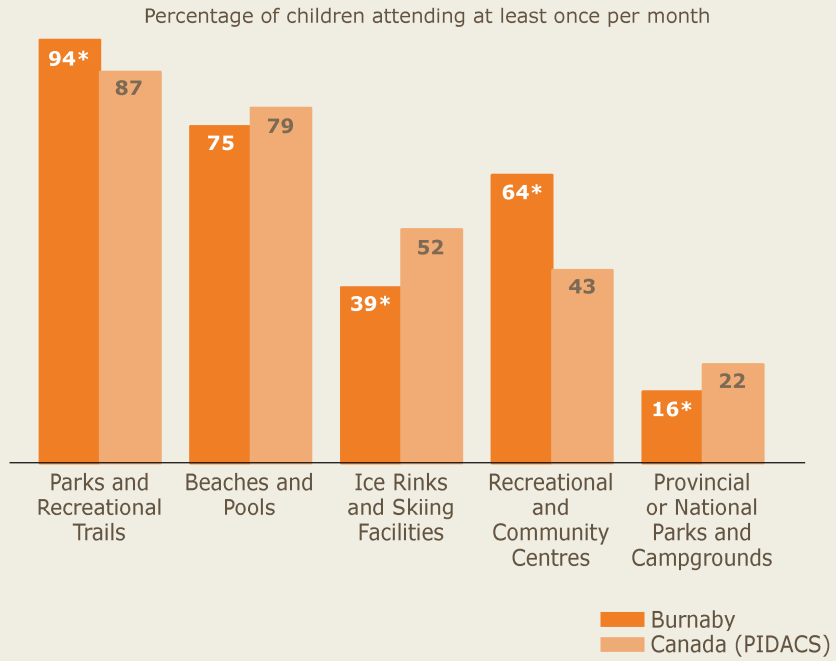
Percentage of children attending at least once per month



Note: Statistically significant differences are indicated with an asterisk.
Source: PIDACS, 2006-07 (Canada) and 2008-09 (Burnaby).

The kindergarten children in Burnaby attended sports events, went to movies, and visited museums and art galleries at a considerably lower rate than the Canadian PIDACS average. However, they attended plays and musical performances at a rate comparable to the Canadian average for children this age.

FIGURE 3-6. Use of recreational resources by kindergarten children



Note: Statistically significant differences are indicated with an asterisk.
Source: PIDACS, 2006-07 (Canada) and 2008-09 (Burnaby).

The PIDACS data indicated that the children in Burnaby, like other Canadian children, frequently used parks and recreational trails, beaches and swimming pools, and recreational and community centres. Parents reported that 94% of the children in this community used parks, play spaces and trails at least once per month. This was exceptionally high, and above the rate for other Canadian children. The children in Burnaby also used recreational and community centres more frequently than other Canadian children this age. Their use of ice rinks and skiing facilities and provincial or national parks and campgrounds, however, was lower than that of the Canadian PIDACS population.

Table 3-7 displays differences among sub-populations of Burnaby in their use of community resources. Overall there were relatively few inequalities in the use of community resources associated with family background, although children from low-income and single-parent families were more likely to attend movies at least once per month, and less likely to use skiing facilities and ice rinks.

TABLE 3-7. Differences among Burnaby sub-populations in kindergarten children's use of community resources (% children)

	Educational				Entertainment and Cultural				Recreational				
	Library or bookmobile	Book clubs and reading programs	Family resource centres	Educational or science centres	Sports events	Movies	Museums and art galleries	Plays and musical performances	Parks and recreational trails	Beaches and pools	Ice rinks and skiing facilities	Recreational and community centres	Parks and campgrounds
All Children	91	27	16	9	10	12	4	7	94	75	39	64	16
Child's Sex													
Girls	90	28	17	9	10	12	4	8	94	77	36	65	17
Boys	91	26	14	9	10	11	4	7	94	74	42	63	15
Family Income													
Below $30,000/year	86	30	18	12	9	**23**	3	9	92	78	**27**	64	21
At or above $30,000/year	93	26	14	8	10	**10**	5	8	96	77	**42**	66	16
Mothers' Employment													
Not employed	89	27	16	10	10	12	3	8	92	76	37	61	16
Employed	93	27	15	9	10	12	5	7	96	76	42	66	16
Fathers' Employment													
Not employed	94	30	28	**24**	6	17	6	6	90	67	**14**	55	9
Employed	91	27	15	**8**	10	10	4	7	94	76	**43**	64	16
Mothers' Education													
Did not complete secondary	92	9	0	9	9	15	0	8	100	77	16	**36**	16
Completed secondary	91	27	16	9	10	12	5	8	94	76	41	**65**	16
Fathers' Education													
Did not complete secondary	79	8	14	0	12	**28**	0	0	**70**	69	27	**34**	14
Completed secondary	91	27	16	9	10	**10**	4	7	**95**	76	41	**64**	16
Family Structure													
Single-parent family	96	22	15	9	14	**26**	6	11	92	74	**24**	62	18
Two-parent family	90	27	16	9	10	**10**	4	7	94	76	**41**	64	16
Immigrant Status													
Non-Immigrant	92	25	**14**	9	9	11	3	7	94	76	**42**	64	**14**
Immigrant	91	30	**22**	9	15	16	8	9	92	73	**28**	63	**25**

Note: Differences that are statistically significant ($p < 0.05$) are in bold text.

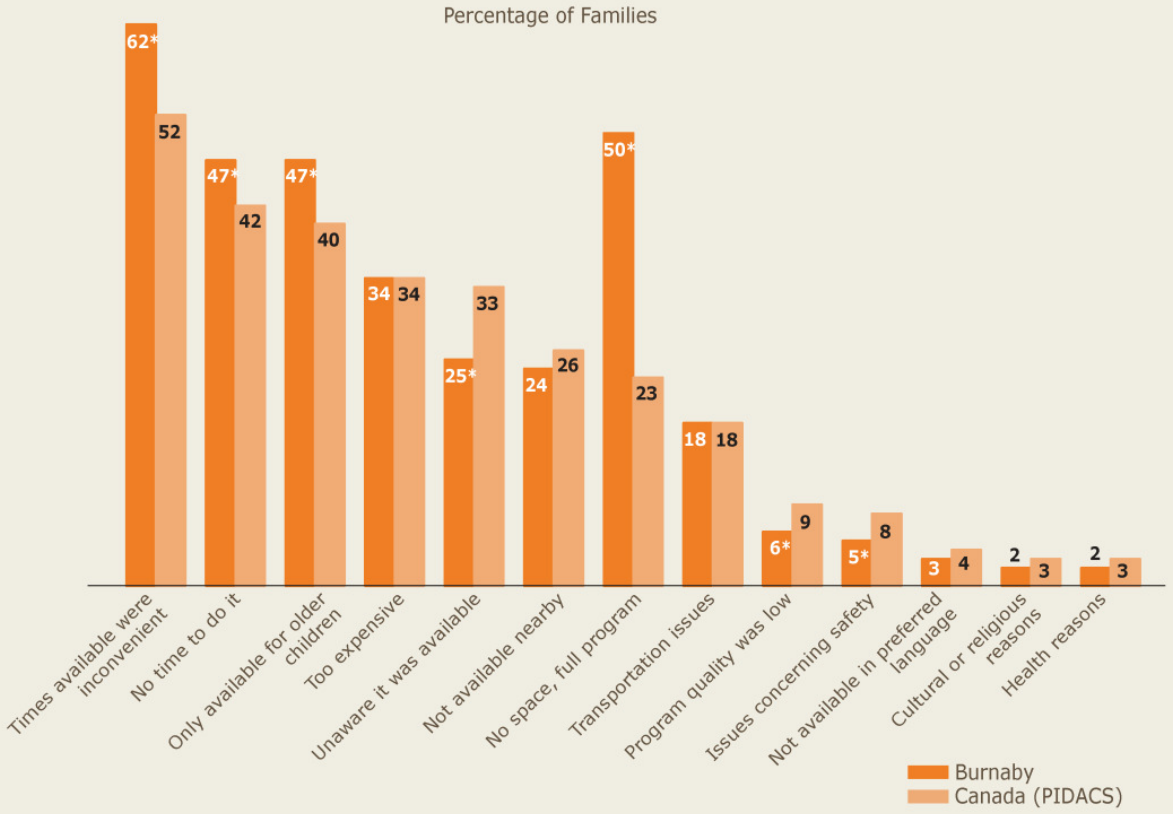
Source: PIDACS, 2008-09 (Burnaby).

Barriers to Family Use of Programs and Community Resources

The factors that facilitate or impede children's participation in community activities vary among communities. PIDACS included a set of questions on the factors that parents felt were barriers to their children's participation. For the full UEY-21 PIDACS sample, the barriers to participation, in order of the frequency indicated by parents' responses, were:

a. Programs were not available at convenient times.
b. There was not enough time.
c. Programs were available to older children only.
d. Programs were too costly.
e. Parents were unaware that the resource existed.
f. The programs of interest were not available in the community.
g. No space available in program (e.g., program full).
h. Getting to the program or service would have been difficult (e.g., no parking, no bus, no car).
i. Quality of the program provided.
j. Safety concerns.
k. Programs were not available in preferred language.
l. Cultural or religious reasons.
m. Health reasons.

FIGURE 3-7. Barriers to the use of programs and resources for kindergarten children



Note: Statistically significant differences are indicated with an asterisk.
Source: PIDACS, 2006-07 (Canada) and 2008-09 (Burnaby).

Figure 3-7 shows the percentage of families in Burnaby that considered each issue to be a barrier to their use of programs and resources. The five most prominent barriers identified by the parents were: programs were not available at convenient times (62%), there was no space available in the programs (50%), programs were only available to older children (47%), there was not enough time (47%), and programs were too costly (34%).

Table 3-8 displays differences in the perceived barriers to the use of programs and resources among sub-populations of Burnaby for the five most important barriers identified. Parents who were employed were more likely than those who were unemployed to consider inconvenient times as a barrier, as were mothers who had completed secondary school and families with incomes above $30,000 per year. Mothers who were employed also indicated that finding the time for their child to participate was a barrier. Program cost was a significant barrier for more than half of single-parent families.

TABLE 3-8. Differences among Burnaby sub-populations in the five most prominent barriers to kindergarten children's use of community resources (% children)

	Times available were inconvenient	No Space, program was full	Only available for older children	No time to do it	Too expensive
All Children	62	50	47	47	34
Child's Sex					
Girls	61	47	47	44	32
Boys	64	52	47	50	35
Family Income					
Below $30,000/year	**44**	43	48	43	**56**
At or above $30,000/year	**70**	53	48	49	**32**
Mothers' Employment					
Not employed	**51**	48	43	**40**	37
Employed	**72**	53	50	**52**	31
Fathers' Employment					
Not employed	**39**	**32**	37	32	33
Employed	**65**	**52**	46	48	31
Mothers' Education					
Did not complete secondary	**16**	**21**	63	22	55
Completed secondary	**64**	**51**	47	48	33
Fathers' Education					
Did not complete secondary	56	47	41	56	43
Completed secondary	64	50	45	46	31
Family Structure					
Single-parent family	59	45	**62**	51	**56**
Two-parent family	63	50	**45**	46	**31**
Immigrant Status					
Non-Immigrant	65	52	**50**	**49**	34
Immigrant	55	42	**36**	**37**	33

Note: Differences that are statistically significant ($p < 0.05$) are in bold text.

Source: PIDACS, 2008-09 (Burnaby).

C. USE OF CHILD-CARE ARRANGEMENTS

High quality child-care programs can have strong and enduring effects on a wide range of early childhood outcomes,[34] and generally, the effects are stronger for children from low socio-economic backgrounds.[35] One must, however, stress the importance of 'high quality'. Programs are effective if they have developmentally-appropriate practices, a curriculum that emphasizes language development, a low child-to-teacher ratio, and programming that is embedded in local service delivery systems.[36] The quality of child-care programs tends to vary considerably in Canada, and therefore their effects also vary.[37]

In PIDACS, the parents were asked a series of questions on the types of care arrangements they used while they were working or studying. Parents were asked whether their child was cared for outside the home, and if so, how the care was provided and for how many hours per week. Table 3-9 summarizes the findings.

In Burnaby, 45% of the families cared for their children at home without any other type of arrangement. This was comparable to the Canadian PIDACS average of 42%. For another 20% of families, care was provided by a relative or an older sibling at home, or by a relative in someone else's home. For those who used an alternate arrangement, the most frequent type was care in a day-care centre. Twenty-one per cent of the parents of kindergarten children used day-care centres or before-school and after-school programs. The Canadian PIDACS average was 19%.

The study also found that among those using a child-care arrangement, about 35% used two or more different types of arrangements. On average, children were cared for in child-care arrangements for about 31 hours per week.

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TABLE 3-9. Use of child-care arrangements for kindergarten children during out-of-school hours (% children)

	Burnaby	Canada (PIDACS)
Did not use a child-care arrangement	**45**	**42**
Used at least one type of care arrangement	**55**	**58**
Most frequently used type of care arrangement		
In own home by a relative (excluding siblings)	11	8
In own home by a sibling	1	1
Someone else's home by a relative	8	10
In own home by a non-relative	6	5
Someone else's home by a non-relative	8	15
Day-care centre	13	10
Before-school or after-school program	8	9
Other child-care arrangement	1	1
Among those using a care arrangement, use of multiple types of care arrangements		
One only	65	59
Two types	24	20
Three or more types	11	11
Total time using some form of care arrangement (hours per week)	30.5 hours	18.4 hours

Source: PIDACS, 2006-07 (Canada) and 2008-09 (Burnaby).

Table 3-10 displays differences among sub-populations of Burnaby in the use of child-care arrangements. There are several factors related to the use of child-care arrangements. Children in low-income families and those whose parents are unemployed or whose mothers had not completed secondary school were less likely to be using some form of child-care arrangement. Children in single-parent families and non-immigrant children were more likely to use a child-care arrangement.

TABLE 3-10. Differences among Burnaby sub-populations in the use of child-care arrangements for kindergarten children (% children)

	Uses Child-Care Arrangement
All Children	55
Child's Sex	
Girls	56
Boys	54
Family Income	
Below $30,000/year	**34**
At or above $30,000/year	**63**
Mothers' Employment	
Not employed	**27**
Employed	**74**
Fathers' Employment	
Not employed	**26**
Employed	**56**
Mothers' Education	
Did not complete secondary	**9**
Completed secondary	**56**
Fathers' Education	
Did not complete secondary	37
Completed secondary	54
Family Structure	
Single-parent family	**69**
Two-parent family	**54**
Aboriginal Status	
Non-Aboriginal	**59**
Aboriginal	**40**

Note: Differences that are statistically significant ($p < 0.05$) are in bold text.

Source: PIDACS, 2008-09 (Burnaby).

D. NEIGHBOURHOOD CHARACTERISTICS

The quality of a neighbourhood and the local community can have positive effects on children's developmental outcomes in several ways. For example, the availability of local playgrounds and pools can directly affect children's physical development. When the neighbourhood is a safe place for children to play, it is easier for parents to be engaged with their children in positive ways. Social support plays an important role; if parents feel supported by their neighbours, friends and family, there tend to be lower levels of family stress and fewer parents experiencing depression.[38]

Three aspects of neighbourhood characteristics were assessed with PIDACS: neighbourhood quality, neighbourhood safety, and neighbourhood cohesion. PIDACS also included a measure of parents' social support. These measures and the results for Burnaby are described below and presented graphically in Figure 3-8.

Neighbourhood Quality. The PIDACS interviewer asked parents some general questions on the quality of their neighbourhood, such as whether the neighbourhood had lots of other families with children, good schools and nursery schools, adequate facilities for children, such as playgrounds and pools, good health facilities, actively-involved residents, and accessible public transportation. The responses were scaled on a ten-point scale, such that 5 was a neutral response. An average rating above 5 was considered to reflect a 'quality neighbourhood'. About 67% of the parents in Burnaby considered their neighbourhood to be of high quality. This was lower than the Canadian PIDACS average of 77%.

Neighbourhood Safety. The PIDACS parent interview included four questions on neighbourhood safety. Parents were asked whether it was safe to walk alone in their neighbourhood after dark; whether it was safe for children to play outside during the day; whether there were safe parks, playgrounds, and play spaces; and whether one could count on adults in the neighbourhood to watch out that children were safe. As with neighbourhood quality, ratings above 5 on the ten-point scale were interpreted as indicating 'safe neighbourhoods'. Eighty-nine per cent of the parents in Burnaby considered their neighbourhoods to be safe, which was comparable to the Canadian PIDACS average of 90%.

Neighbourhood Cohesion. This PIDACS measure refers to whether neighbours were close and supported each other. In communities that scored high on this measure parents felt that neighbours helped each other, that when there was a problem the neighbours got together to deal with it, that there were adults in the neighbourhood that children could look up to, that parents watched out to make sure children were safe, and that when the family was away from home the neighbours kept their eyes open for possible trouble. Ratings above 5 on the ten-point scale for this measure were considered indicative of a 'cohesive neighbourhood'. In Burnaby, 84% of the parents considered their neighbourhoods to be cohesive, which was below the Canadian PIDACS average of 91%.

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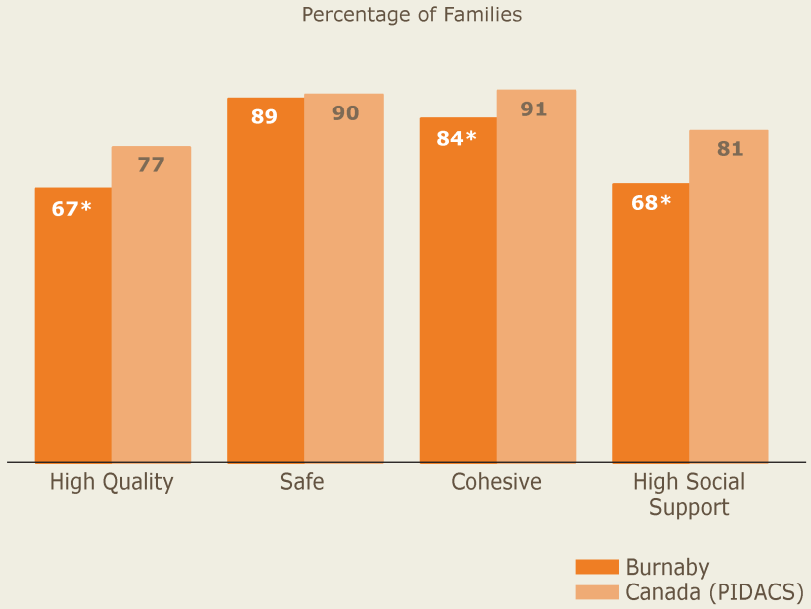
[38] Mulvaney, C. & Kendrick, D. (2005). Depressive symptoms in mothers of pre-school children effects of deprivation, social support, stress and neighbourhood social capital. *Social Psychiatry and Psychiatric Epidemiology*, *40*, 202-208.

FIGURE 3-8. Assessments by parents of kindergarten children of neighbourhood characteristics and social support



Note: Statistically significant differences are indicated with an asterisk.
Source: PIDACS, 2006-07 (Canada) and 2008-09 (Burnaby).

Social Support. This PIDACS measure assesses the level of support that the parent felt from friends and family members. In communities that scored high on this measure, parents felt that there were family members and friends who helped them feel safe, secure and happy, that there were people they could turn to for advice or to talk about problems, and that there were people who shared their interests and had similar attitudes and concerns. As the scores on this measure were negatively skewed, a higher cut-off point, 6.67 on the ten-point scale, was used to indicate a high level of social support. About 68% of the parents in Burnaby indicated that they felt high levels of social support, which was considerably below the Canadian PIDACS average of 81%.

Table 3-11 displays differences among sub-populations of Burnaby in the percentage of families reporting high levels on the measures of neighbourhood characteristics and social support. There were relatively few differences among sub-populations on these measures. A lower percentage of single parents considered their neighbourhoods as safe or cohesive, and parents who were immigrants or in families with incomes below $30,000 per year were less likely to feel they had adequate social support.

TABLE 3-11. Differences among Burnaby sub-populations in parents' assessments of neighbourhood characteristics and social support (% families)

	High Quality	Safe	Cohesive	High Social Support
All Children	67	89	84	68
Child's Sex				
Girls	68	88	83	70
Boys	66	89	85	66
Family Income				
Below $30,000/year	64	87	80	**47**
At or above $30,000/year	69	90	85	**72**
Mothers' Employment				
Not employed	68	86	82	67
Employed	67	90	85	69
Fathers' Employment				
Not employed	72	86	78	67
Employed	67	90	86	68
Mothers' Education				
Did not complete secondary	70	91	70	75
Completed secondary	67	89	84	68
Fathers' Education				
Did not complete secondary	84	91	83	45
Completed secondary	67	90	85	68
Family Structure				
Single-parent family	76	**80**	**72**	76
Two-parent family	66	**90**	**85**	67
Immigrant Status				
Non-Immigrant	69	89	84	**71**
Immigrant	62	90	83	**58**

Note: Differences that are statistically significant ($p < 0.05$) are in bold text.
Source: PIDACS, 2008-09 (Burnaby).

IV

LOOKING FORWARD

IV. LOOKING FORWARD

A. WHAT MAKES BURNABY UNIQUE?

Community-based research is important as it can help a community and its members understand how well their youngest citizens are developing and how they might provide the best possible environment for them. In this study, children's cognitive skills, behaviour, and physical health and well-being were assessed during kindergarten using two approaches: by direct assessments of children's development and by parent perceptions through the *Parent Interviews and Direct Assessments of Children Survey (PIDACS)*.

The first approach involved direct assessments of the children's language and cognitive skills. The children of Burnaby had scores on receptive vocabulary that were below the Canadian PIDACS average. (See discussion regarding the Canadian PIDACS average on page I-8). However, they scored above average on an assessment of pre-literacy skills, and their scores on a test of number knowledge were comparable to the Canadian PIDACS average.

The second approach involved the children's parents, who assessed their children's behaviour and health outcomes as part of the PIDACS parent interview. Based on parents' responses, the prevalence of children in Burnaby with behavioural problems was comparable to the Canadian average. However, 17% of the children in the sample had low scores on the measure of positive social behaviour. On assessments of general health, allergies, and chronic conditions, the prevalence of children with significant health problems was comparable to the Canadian average. Burnaby had a relatively low prevalence of children with asthma.

The 2006 Canadian Census data indicated that the average level of family income in Burnaby was about $74,000, which was below the Canadian average of about $82,000. The median level of family income in Burnaby was about $61,000, which was also below the Canadian average of about $66,000. Also, there was a relatively high prevalence of families with incomes below $30,000; 20.5% compared with the national average of 15.1%. The unemployment rate was 6.8%, similar to the national rate. Burnaby had a large immigrant population; about 11% of its residents had immigrated during the five years preceding the 2006 Canadian Census.

Alongside these challenges, Burnaby had a mixed profile on the indicators of support for early childhood development. The prevalence of parents with an 'authoritative' style was relatively low, and there was a high prevalence of families indicating problems with family functioning. The level of participation in organized sports was relatively high, but the average time spent watching television or videos was 1.8 hours per day, which was above the Canadian PIDACS average. Families tended to make good use of libraries, recreational and community centres, and parks and recreational trails. The most prominent barriers to participation in children's programs were that programs were not available at convenient times (62%), there was no space available in the programs (50%), programs were only available to older children (47%), there was not enough time (47%), and programs were too costly (34%). About 55% of the families in this community used some form of child-care arrangement while working or studying. The most frequently used type of care was day-

care centres. About two-thirds of parents' had positive assessments of their local neighbourhoods, which was considerably lower than the Canadian average. Also, about two-thirds of parents reported low levels of social support.

B. CONCLUDING REMARKS

The UEY Initiative is providing communities with valuable information on their needs and strengths. UEY is helping communities with different economic, social and physical characteristics to understand how their young children are faring, what the community is doing to support those children, and which family and community factors may influence young children's development. This *Community Research Report* for Burnaby, British Columbia presents data on kindergarten children's development and on family and community experiences from the *Parent Interviews and Direct Assessments of Children Survey.* The data were provided by parents and trained assessors reporting on the development of the children in their homes and at school.

Other local information available through the UEY project includes the results of kindergarten teachers' assessments of children's development using the *Early Development Instrument*, information on availability and accessibility of programs and services, and results describing local socio-economic characteristics from the Canadian Census. Taken together, these data can be used to start conversations about the implications of the research and the needs of children in this community. The local UEY project staff will work with the UEY coalition of community organizations and individuals to create an evidence-based *Community Action Plan* to address the gaps in community supports for their young children. Through the development of the *Community Action Plan*, and through events and activities to share the research information with parents, service providers, educators and others, the UEY staff and coalition will engage this community to better understand the importance of the development of their young children and the approaches to enhance that development.

APPENDIX A: LIST OF PARTICIPATING COMMUNITIES

COMMUNITY	HOST ORGANIZATION
UEY Pilot Communities (5) Funded in 2000	
UEY PRINCE ALBERT	Saskatchewan Rivers School Division No. 119, Prince Albert, Saskatchewan
UEY WINNIPEG	Winnipeg School Division No.1, Winnipeg, Manitoba
UEY NORTH YORK	Adventure Place, North York, Ontario
UEY PRINCE EDWARD ISLAND	Early Child Development Association of PEI, Charlottetown, Prince Edward Island
UEY SOUTHWESTERN NEWFOUNDLAND	Community Education Network, Stephenville, Newfoundland
UEY Pilot Communities (7) Funded in 2001	
UEY ABBOTSFORD	United Way of the Fraser Valley, Abbotsford, British Columbia
UEY SASKATOON	Saskatoon Communities for Children, Saskatoon, Saskatchewan
UEY SOUTH EASTMAN	South Eastman Health/Santé Sud-Est Inc., Steinbach, Manitoba
UEY NIAGARA FALLS	Early Childhood Community Development Centre, St. Catharines, Ontario
UEY DIXIE-BLOOR OF MISSISSAUGA	Peel District School Board, Mississauga, Ontario
UEY MONTRÉAL	Centre 1, 2, 3 Go!, Montréal, Québec
UEY HAMPTON	Hampton Alliance for Lifelong Learning, Hampton, New Brunswick
UEY Communities (21) Funded in 2005	
UEY GREATER VICTORIA	Community Social Planning Council of Greater Victoria, Victoria, British Columbia
UEY MISSION	United Way of the Fraser Valley, Abbotsford, British Columbia

UEY OKANAGAN SIMILKAMEEN	School District No. 53 (Okanagan Similkameen), Oliver, British Columbia
UEY SUNSHINE COAST	Powell River Child, Youth and Family Services Society, Powell River, British Columbia
UEY CAMPBELL RIVER	Campbell River Child Care Society, Campbell River, British Columbia
UEY NORTH SHORE	North Shore Community Resources, North Vancouver, British Columbia
UEY NORTHEAST SASKATCHEWAN	Northeast Regional Intersectoral Committee, Melfort, Saskatchewan
UEY DIVISION SCOLAIRE FRANCO-MANITOBAINE	Division scolaire franco-manitobaine, Lorette, Manitoba
UEY NIAGARA REGION	Early Childhood Community Development Centre, St. Catharines, Ontario
UEY OTTAWA	Success by 6/6 ans et gagnant Ottawa, Ottawa, Ontario
UEY NORTHERN REGION OF ONTARIO	Superior Children's Centre, Wawa, Ontario
UEY KAWARTHA LAKES AND HALIBURTON COUNTY	Ontario Early Years Centre - Haliburton Victoria Brock, Lindsay, Ontario
UEY LOWER HAMILTON	Wesley Urban Ministries, Hamilton, Ontario
UEY MILTON	Reach Out Centre for Kids, Burlington, Ontario
UEY NORTHUMBERLAND COUNTY	Northumberland Child Development Centre, Port Hope, Ontario
UEY POINTE-DE-L'ÎLE	Centre 1, 2, 3 Go!, Pointe-de-l'Île, Montréal, Québec
UEY MONTRÉAL CHASSIDIC AND ORTHODOX COMMUNITY	YALDEI Developmental Centre, Montréal, Québec
UEY GREATER SAINT JOHN	Family Plus-Life Solutions Inc., Saint John, New Brunswick
UEY CUMBERLAND COUNTY	Cumberland Mental Health Services, Amherst, Nova Scotia
UEY HALIFAX WEST AND AREA	Sackville-Bedford Early Intervention Society, Lower Sackville, Nova Scotia
UEY WESTERN NOVA SCOTIA	Nova Scotia Community College (Kingstec Campus), Kentville, Nova Scotia

UEY Communities (16) Funded in 2007	
UEY BURNABY	Burnaby Family Life, Burnaby, British Columbia
UEY NEW WESTMINSTER	Lower Mainland Purpose Society, New Westminster, British Columbia
UEY WEST KOOTENAY	Kootenay Boundary Community Services Co-operative, Nelson, British Columbia
UEY NORTH PEACE - NORTHERN ROCKIES	North Peace Community Resources Society, Fort St. John, British Columbia
UEY KAMLOOPS	Interior Community Services, Kamloops, British Columbia
UEY COWICHAN VALLEY	Volunteer Cowichan, Duncan, British Columbia
UEY RED DEER	Family Services of Central Alberta, Red Deer, Alberta
UEY MOOSE JAW - SOUTH-CENTRAL SASKATCHEWAN	Prairie South School Division No. 210, Moose Jaw, Saskatchewan
UEY REGINA	Regina Qu'Appelle Health Region, Regina, Saskatchewan
UEY SOUTHEAST SASKATCHEWAN	Holy Family Roman Catholic School Division No. 140, Weyburn, Saskatchewan
UEY PRINCE ALBERT GRAND COUNCIL	Prince Albert Grand Council, Prince Albert, Saskatchewan
UEY SELKIRK-INTERLAKE	Lord Selkirk School Division, East Selkirk, Manitoba
UEY MALTON	Peel District School Board, Mississauga, Ontario
UEY GEORGINA	York Child Development and Family Services, Newmarket, Ontario
UEY PICTOU, ANTIGONISH AND GUYSBOROUGH	Kids First Association, New Glasgow, Nova Scotia
UEY CAPE BRETON – VICTORIA	Cape Breton Family Place Resource Centre, Sydney, Nova Scotia