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**Variations in Child Development Outcomes
Among Children Living in Lone-Parent Families
W-98-7E**

by

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Executive Summary

Single parenthood has become increasingly common in most industrialized countries. The growth in lone-parent families has been one of Canada's most significant social trends. However, in the search for what it is about the structure of lone-parent families that raises barriers to healthy child development, children in these families are considered a homogenous group. We tend to ignore the fact that there is quite a wide range of outcomes and we lose sight of the fact that while lone-parent children are at higher risk for certain poor developmental outcomes compared to other children, the clear majority grow up healthy.

This paper uses data from the National Longitudinal Survey of Children and Youth (NLSCY) to document where differences exist across a very broad range of developmental outcome variables between children living in lone-parent families and a comparison group consisting of all children. A total of 55 age-specific outcomes were examined for children aged 2 to 3 years, 4 to 5 years; and 6 to 11, respectively. The results show that children living in lone-parent households exhibit on average poorer developmental outcomes over quite a wide range when compared to the outcomes of the child population in general. Of the 55 outcome variables examined, there were unfavourable discrepancies of 25 percent or more in the summary "scores" in 38 cases (69 percent). This strongly suggests there are some factors associated with living in a lone-parent environment that prejudices child development. Importantly, these results do not mean that lone-parenthood *per se* is the main factor; rather, there is most likely a constellation of factors strongly associated with lone parenthood.

From a public policy perspective, our findings strongly support using lone-parenthood as a marker or guide for focussing policy initiatives, keeping in mind an important fact. Our work shows there is a wide distribution of outcomes among children living in lone-parent families, suggesting that not all lone-parent families and their children require assistance. So while lone-parent families can be used as a guide to where policy assistance might have the highest pay-off, it does not entail a "blanketing" of lone-parents with intervention initiatives. Care must be taken not to stigmatize lone-parenthood as a family structure.

Sommaire

La monoparentalité est de plus en plus courante dans la plupart des pays industrialisés. L'augmentation du nombre de familles monoparentales est l'une des tendances sociales les plus importantes au Canada. Cependant, quand on veut déterminer les éléments de la structure des familles monoparentales qui constituent des obstacles au développement sain des enfants, les enfants de ces familles sont considérés comme un groupe homogène. Nous avons tendance à ne pas tenir compte du fait qu'il y a un éventail assez vaste de résultats, et à oublier que même si les enfants des familles monoparentales présentent des risques plus élevés d'obtenir certains résultats développementaux médiocres par rapport à d'autres enfants, la vaste majorité grandit en santé.

Nous utilisons ici les données de l'ELNEJ pour établir où il existe des différences entre les enfants de familles monoparentales et un groupe témoin composé de tous les enfants en ce qui concerne un éventail très vaste de variables de résultats développementaux. Au total, 55 variables associées à l'âge ont été examinées pour les enfants de 2 à 3 ans, les enfants de 4 à 5 ans et les enfants de 6 à 11 ans, respectivement. Notre analyse montre que les enfants qui vivent dans des familles monoparentales obtiennent, en moyenne, de moins bons résultats développementaux sur une échelle assez vaste par rapport à la population des enfants en général. Parmi les 55 variables examinées, il y a avait des écarts défavorables de 25 % ou plus dans les résultats sommaires de 38 cas (69 %). On peut donc en déduire que certains facteurs associés à la monoparentalité sont préjudiciables pour le développement de l'enfant. Toutefois, et c'est là un élément important, cela ne signifie pas que la monoparentalité en soi est le principal facteur, mais qu'il y a probablement une myriade de facteurs fortement corrélés à la monoparentalité.

Du point de vue de la politique publique, nos constatations militent en faveur de l'utilisation de la monoparentalité comme marqueur ou guide pour orienter les initiatives stratégiques, compte tenu d'un facteur important : notre travail montre une vaste distribution des résultats parmi les enfants qui vivent dans des familles monoparentales, ce qui laisse penser que ce ne sont pas toutes les familles monoparentales et tous leurs enfants qui ont besoin d'aide. Ainsi, même si on peut utiliser la monoparentalité pour déterminer les secteurs où les politiques publiques pourraient être les plus utiles, il ne faut pas cibler indistinctement l'ensemble des familles monoparentales. Il faut prendre garde de ne pas stigmatiser la structure familiale que constitue la monoparentalité.

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1. Introduction

One of the most critical research and public policy issues facing Canada centres on the extent to which family structure affects child well-being—most specifically the impact of lone-parenthood. Single parenthood has become increasingly common in most industrialized countries. The growth in lone-parent families has been one of Canada's most significant social trends. In 1995, there were over 1.1 million lone-parent families, an increase of 60 percent from 1981. By the mid nineties, lone-parent families made up 14 percent of all families in Canada, and over 20 percent of families with children.¹ While in the past, most lone-parent families were created when one parent died, divorce and separation are now the major causes.²

Living in households headed by one-parent frequently means living with social and economic conditions considerably different from those of two-parent families. What have been the consequences for children? Researchers have been preoccupied with this question for the past twenty years. Social scientists from many countries have conducted a large number of studies comparing the well-being and development of children living in lone-parent and two-parent households. These studies suggest that children living with a lone-parent are on average at increased risk for physical and mental health problems and have lower levels of well-being, competence, and attainment than children from intact two-parent families.

Children from lone-parent households, for example, typically tend to score lower than children in two-parent households on measures of academic achievement, and higher on measures of psychiatric disorders.³ A recent American study concludes that lone-parent children are twice as likely to drop out of high school, twice as likely to become parents themselves before age 20, and one and a half times as likely to be idle (out of work and out of school) in their late teens and

¹ Statistics Canada. "Canadian Families: Diversity and Change," *General Social Survey*, Catalogue 12F0061XPE, 1996, p. 4.

² Vanier Institute of the Family. *Profiling Canada's Families*, Ottawa, 1994, p. 50.

³ Blum, Munroe H. *et al.* 1988; and Wadsworth, J., I. *et al.* 1985.

early twenties than children from intact families.⁴ Consistent with these findings, these children attain lower status jobs and earn less money in adulthood.⁵

The weight of evidence suggests differences on a number of measures between children growing up in lone-parent families and two-parent families. In explaining why lone-parent children on average face greater developmental problems, a number of factors are frequently contemplated as important, such as: the cause of lone-parenthood; time spent in a lone-parent household; race; parents' educational status; household income level; the availability of community resources; and the extent of social networks.

However, in the search for what it is about the structure of lone-parent families that raises barriers to healthy child development, children in these families are considered a homogenous group. We tend to ignore the fact that there is quite a wide range of outcomes and we lose sight of the fact that while lone-parent children are at higher risk for certain poor developmental outcomes compared to other children, the clear majority grow up healthy. Analysing data from Cycle 1 of the National Longitudinal Survey of Children and Youth (NLSCY), Lipman, Offord and Dooley find that "for all types of problems, the majority of children from single-mother families did not have problems."⁶

The objective of our research is to use the rich NLSCY data to document exactly where differences exist across a very broad range of developmental outcome variables between children living in lone-parent families and a comparator group consisting of all children. This comprehensive national survey provides a unique opportunity to explore and document these differences among Canadian children.

⁴ McLanahan, S. and G. Sandefur. 1994.

⁵ Amato, P. and B. Keith. 1991.

⁶ Lipman, E. *et al.* 1996

In a companion paper, we have carried our research a stage further.⁷ Most research has focussed on the differences in developmental outcomes between children living with two parents compared to those living with only one parent. However, less is known about the range of outcomes *among* children in lone-parent families. Instead of focussing on comparisons between lone-parent families and two-parent families - and the question of family structure *per se* - our second research report explores the range in outcomes within the lone-parent group. The NLSCY provides important information about the complex range of factors which influence and explain the wide distribution of child development outcomes within lone-parent families.

⁷ Ross, David P. *et al.* 1998.

2. Research Design and Methodology

A summary of our research plan for this exploratory descriptive investigation follows. First, we developed frequency distributions of lone-parent children and all children, aged from birth to 11 years, for 30 outcome variables contained in the parent interviews of the NLSCY.⁸ We look at selected measures for three age groups: 2 to 3 year-olds; 4 to 5 year-olds; and 6 to 11 year-olds — (In total, we examine 55 age-specific outcome variables). These age groups were chosen because they represent distinctive developmental phases of a child's life, and consequently, are used throughout the NLSCY. The magnitude of developmental change in early years is arguably greater than change among older school-age children.

In choosing a comparator group for one-parent children, we had two choices: all children; or children in two-parent families. We have chosen to compare the distribution of outcome variables for lone-parent children with the general child population. This report is not concerned with studying the effect of family structure *per se*, and using all children as a baseline allows us to focus on where lone-parent children converge and diverge from general developmental patterns in the child population. It facilitates a broader search for explanations behind these patterns, rather than focussing on family structure as comparative studies of lone-parent and two-parent children tend to do.

In roughly seventy percent of the cases of all outcomes for children in lone-parent families there were noticeable differences in the plotted distributions of outcomes, compared to all children. Selected findings are presented to document the variation evident among lone-parent children and to identify the areas where lone-parent children appear to be particularly vulnerable.⁹ Noted trends and patterns are summarized in the conclusion.

⁸ See "Technical Appendix" *Growing up in Canada: National Longitudinal Survey of Children and Youth* for the methodological details of Cycle 1 of the NLSCY.

⁹ We use the term "vulnerable" children in an effort to reinforce the notion that children who display negative tendencies on particular outcomes according to the NLSCY (i.e., aggressive behaviour) will not necessarily experience poor developmental outcomes over the long term. (Please see the elaboration of this term in our companion paper cited in footnote 10.)

2.1 Survey Measures

The outcome variables studied in this report are taken from the NLSCY. Specifically, information is gathered from the parent questionnaire, two tests of the children performed by the interviewer, Motor and Social Development (MSD) and the Peabody Picture Vocabulary Test - Revised (PPVT-R), and an NLSCY math test performed by the child at school. Responses for these outcome variables can be grouped into two general formats:

- 1) numerical scores on summary scales or indices¹⁰
- 2) non-scaled variables which include nominal and ordinal variables

The first group of variables are frequently referred to as “scaled” responses, where the results of many separate questions are combined into a single summary scale. For example, most of the behaviour measures in the NLSCY take the form of scales — a result of statistical analysis performed by Statistics Canada on the large number of behaviour questions which were then combined into summary scale measures. We have also included in this general group of variables the math test scores, and the interval measures MSD and PPVT-R.

The second group of data includes a variety of nominal and ordinal variables. These variables each consist of pre-existing response categories, such as: “yes” or “no;” or “always,” “frequently,” “sometimes,” “rarely,” and “never.”

2.2 Data Analysis Techniques

Our analysis of the outcome variables relies upon two techniques. The first technique entails the use of summary cut-offs for each variable. These were used to compare the results of the general population of children (all children) with the results for lone-parent children. Our second technique was a focus on the overall distribution of each population, for selected variables, so as to investigate the differences across the whole distribution. We developed procedures to define cut-offs for the variables depending upon whether they were scale variables or categorical variables.

¹⁰ The scale or index data are constructed were based on a number of previous scale measures used in other surveys. (See Statistics Canada, 1995, for further information on survey instrument development.)

2.2.1 Summary Statistics for Scale Data

To develop a summary statistic for each scale variable in this paper, we focused on the proportion of all children falling in the bottom reaches of each distribution (the bottom “tail”), by setting a threshold at which approximately 10 percent of children score below the threshold. This threshold level has occasionally been employed as a “clinical” cut-off in epidemiologic studies for various childhood disorders.¹¹ We have adopted it here as a useful summary statistic, but it should not be interpreted as necessarily having clinical significance. It simply portrays the proportion of children who recorded the “poorest” outcomes, and consequently, may be considered “vulnerable”. Due to the method by which scores on the scales are assigned, the proportions of children falling at each level may sometimes be slightly above, or below 10 percent.

Having established this cut-off procedure for the general population of children, the resulting thresholds were calculated and then applied to the corresponding distributions of lone-parent children. The proportion of lone-parent children falling below these cut-off scores were then recorded. As noted above, we use all children as the baseline in order to establish what a “normal” variation might be for each of the outcome variables.

There were two instances where we did not use the 10 percent cut-off for scale variable measures. The PPVT-R and MSD are two outcome variables which have established cut-off points for analysis. We adopted these pre-existing cut-offs for our investigation, which essentially divide the distributions by level of development of the child.

2.2.2 Summary Statistics for Non-Scaled Data

While some of the questionnaire data from the NLSCY were converted into scales, much of the data were left in the originally coded question formats, which provided a range of categorical responses. In these cases, the choice of summary statistic was somewhat different from that involving scale scores, although it also focussed on the lower ends of the outcome distributions.

¹¹ E. Lipman, Offord, and Dooley. See footnote 7. Also: Offord, D.R., M.H. Boyle, P. Szatmari, *et al.* “Ontario Child Health Study: II. Six-month prevalence of disorder and rates of service utilization,” *Archives of General Psychiatry*, Vol. 44, 1987, pp. 832-836.

When comparing responses to dichotomous categorical variables (for example, “Has your child ever repeated a grade?”), we simply chose those who responded ‘yes’. For all other categorical variables which allowed a range of possible responses, we selected those children who fell into the response categories representing less desirable or ambiguous outcomes. Thus, in the case of the variable question, “During the past 6 months, how well has your child gotten along with other kids, such as friends or classmates (excluding brothers or sisters)?” we selected the cut-off to emphasize the less desirable outcome - that is, those children who say they only get along “not well at all,” “not too well,” or “pretty well”. To identify differences between the categorical responses for lone-parent and all children, we followed the same process of comparing summary statistics.

As mentioned, our analysis of the outcome variables uses cut-offs which emphasized less desirable or ambiguous outcomes. Two reasons drove our choice of the less desirable outcomes. First, we are generally concerned to uncover areas where specific populations of children are doing relatively more poorly compared to other children. Our second reason, is that frequently we were forced to expand our cut-offs into more ambiguous answer categories of the variables so as to obtain reliable sampling data.

2.2.3 Determining Comparative Difference

In order to determine whether the general population of children differed from lone-parent children, we decided to adopt a proportional comparison methodology. This method consists of comparing the proportion of “all children” above the cut-off for a particular variable (using the procedures as explained above), to that of lone-parent children. In order to obtain the ratio of comparison, the proportion of lone-parent children above a particular cut-off was divided by the proportion of all children above the same cut-off. That is, in all cases the numerator of the ratio was the proportion of lone-parent children, while the denominator was always the proportion of all children.

Where the ratio of these two figures was equal to or greater than 1.25, or equal to or less than 0.80, we would consider the differences to be ‘noticeable’ and important. The ratio itself indicates those comparisons where the differences between lone-parent children and the overall population of children was 25 percent or more, or where lone-parent children were only 80

percent of the overall population of children. When the proportion of lone-parent children above a cut-off exceeded that of all children, the ratio would be above 1.00, when it was less the ratio would be below 1.00. Therefore, there is a range of ratio values (between 0.80 and 1.25) where the differences between the two populations of children are not that different. When the ratio of comparison is 1.00, this represents an equivalency between the two groups for a particular attribute (above the cut-off). We have applied this method to each of the variables by the appropriate age group, for this paper.

For example, the proportion of 2 to 3 year old, lone-parent children who in general have health rated as 'poor', 'fair' or 'good' (rather than 'excellent' or 'very good') is 13.7 percent. In contrast, the proportion of all 2 to 3 year old children with the same general health is 10.1 percent. The ratio, therefore, of these two figures is approximately 1.36. This ratio falls above our threshold of 1.25, thus, lone parent children are more than 25 percent likely to be in the poorer health categories than the general population of all children.

2.2.4 Surveying the Total Distribution

An analysis of possible differences between the lone-parent and general population of children using the ratio measure, provides a concise way of determining divergences. Unfortunately, like all summary measures, it does not allow for a complete overview of the distributions being measured. By its very nature it summarizes, and thus glosses over, possibly interesting divergences between lone-parent children and the general child population. What is needed, is to support this summary inspection with more visual inspections of the distributions.

Therefore, to complement the summary cut-off measure method, we also plotted the frequency distributions of selected outcome variables for lone-parent and all children. These distributions were then analysed for visible differences across the entire range of the distribution, not just within the bottom "tail." The selected variables used in this analysis come from each of the general outcome areas and meet the ratio comparison cut-off. This procedure was used for both scale and categorical variables.

3. Outcome Variations Between Lone-Parent Children and All Children—Summary Ratio Measure Analysis

We examined 30 distinct outcome variables contained in the parent questionnaire of the NLSCY for our three different age groups: 2 to 3 years; 4 to 5 years; and 6 to 11 years. For each age group, we found that in roughly seventy percent of the cases, there were observable differences between the frequency distributions for lone-parent and the general population of children.

Specifically, of the 11 variables we examined for 2 to 3 year-olds, there were summary measure differences in six variables. Among 4 to 5 year-olds, there were differences in fourteen out of 19 variables, and among 6 to 11 year-olds, there were differences in eighteen out of 25. The number of differences and similarities in outcomes between lone-parent and all children are summarized in Table 3.1. In the vast majority of cases, differences reflect poorer outcomes for lone-parent children.

Table 3.1
Outcomes Measures Overview by Age Group

Age Group	No differences between outcomes of lone-parent children and all children	Differences between outcomes of lone-parent children and all children	Total number of outcomes examined
2 to 3 years	5	6	11
4 to 5 years	5	14	19
6 to 11 years	7	18	25
Total	17	38	55

3.1 Summary of Outcomes for 2 to 3 Year-Olds

Variables for this age group are divided across three general outcome domains: health of the child; behaviour of the child; and activities in which the child participates (Table 3.2). We established cut-offs for each variable and compared the resulting ratio between lone-parent children and the general population of children.

Within the health outcome domain are five variables: general health of the child; whether the health of the child over the past 6 months was good; motor and social development; long term health conditions; long term conditions which limit the child's participation in activities. Two of the health variables meet the requirements of our cut-off ratio. General rated health of the child (answered by the PMK) with a ratio of 1.36, and whether the child's health within the past 6 months was good, with a ratio of 1.35. Our cut-off for a child's health emphasized those children who were in poor, fair or good health (as opposed to those who were in very good to excellent).

**Table 3.2
Summary Outcomes for 2 to 3 Year-Olds**

Outcome Domains and Variables	Lone-Parent Children	All Children	Difference Ratio
<i>Health</i>			
◆ In general, how would you rate child's health? (children rated good, fair and poor)	13.7	10.1	1.36
◆ Over the past few months, how often has child been in good health? (children in good health about half the time, sometimes, almost never)	7.4	5.5	1.35
◆ Motor and Social Development (children with scores less than 80)	10.0	11.0	0.91
◆ Does child have any long-term conditions diagnosed by a health professional? (children who have one or more)	17.5	16.8	1.04
◆ Does child have any long term conditions or health problems which prevent or limit their participation in school, at play, or in any other activity for a child of their age? (children are limited in their activities)	2.4	2.4	1.00
<i>Behaviour</i>			
◆ Hyperactivity / Inattention Scale (children with scores 8 or above)	22.6	13.6	1.66
◆ Separation Anxiety Scale (children with scores 6 or above)	14.8	9.6	1.54
◆ Emotional Disorder / Anxiety Scale (children with scores 3 or above)	22.5	15.4	1.46
◆ Physical Aggression / Opposition Scale (children with scores 9 or above)	17.6	12.1	1.46
◆ Prosocial Behaviour Scale (children with scores 9 and above)	15.0	16.8	0.89
<i>Activities</i>			
◆ Does your child currently attend any nursery school, play group or other early childhood program or activity? (children who do attend)	25.9	32.1	0.81

On average, lone-parent children are more likely than the overall population of children to have a rated health that is poor, fair or good. As well, lone-parent children were more likely than the general population of children to have been almost never, sometimes or half of the time, in good health over the last 6 months. However, based on our ratio results, lone-parent children are no more likely than all children to have low motor and social development (ratio 0.91), a long term

health condition (1.04), or a long term condition that limits or prevents their participation in activities (1.00).

Four of the variables in the Behaviour domain had cut-off ratios that exceeded our limit of 1.25. The ratio difference score of 1.66 for the hyperactive/inattentive variable indicates that lone-parent children were approximately two-thirds more likely to exhibit this behaviour than the general population of 2 to 3 year old children. Lone parent children were also over 50 percent more likely to experience separation anxiety than the general population of 2 to 3 year old children - ratio score of 1.54. A similar finding for both emotional disorder/anxiety and physical aggression/opposition, suggest that lone-parent children are relatively more prone to exhibit emotional or physically aggressive behaviour than the general population of children - both behaviour variables with ratio scores of 1.46.

There is not a large difference, using our ratio criterion, between the prosocial behaviour of all children ages 2 to 3 years, and our lone-parent children of the same age group (ratio 0.89). As well, our lone activities domain variable (child does not currently attend nursery school) does not exhibit a large ratio (0.81) between the scores of lone-parent children and the general population of children. Lone parent children, therefore, are just as likely to be prosocial, or not attend nursery school or playgroup, as the general population of 2 to 3 year old children.

For the most part, younger lone-parent children tended to have poorer health and behaviour results than the general population of children (all children). This would suggest that lone-parent 2 to 3 year-olds are at relatively greater vulnerability than the general population of children of the same age. Interestingly, lone-parent children were just as likely not to attend nursery school, and just as likely to be prosocial, as all children.

3.2 Summary of Outcomes for 4 to 5 Year-Olds

Five general outcome domains define the range of variables for this age group: health, behavioural, relationship, academic achievement, and activities variables (Table 3.3). In the majority of cases lone-parent children are more likely to suffer from lower scores or perform

more poorly than the general population of all children. Indeed, for many of these differences we observe that lone-parent children can be as much as 50 percent more likely to perform poorly than all 4 to 5 year-old children.

Within the general health domain, lone-parent children in comparison to the general population of children ages 4 to 5 years, tend to suffer from lower levels of health (ratio 1.58), have this less than good health persist over longer periods of time (ratio 1.27), and have health conditions which limit their participation in school and activities (1.61). Yet, there is not a large difference regarding the rates at which the general population of 4 to 5 year-olds and lone-parent 4 to 5 year-olds have long term health conditions diagnosed by a health professional (ratio 0.98). These results tend to parallel the results for the 2 to 3 year-olds except that the 4 to 5 year-old lone-parent children are more likely to suffer from some activity limitation.

Each of the six variables in the behaviour domain reveal lone-parent children to be considerably different from the general population of 4 to 5 year-old children. Lone-parent children are much more likely than all children to have poor scores for indirect aggression (ratio 1.61), emotional disorder/anxiety (ratio 1.53), conduct disorder (ratio 1.45), hyperactivity (ratio 1.44), and property offences (ratio 1.43). We observe also that the general population of children are substantially more likely to possess higher prosocial behaviour scores than lone-parent children (ratio 0.61).

Similar findings follow for the relationships, and academic achievement domain variables. Lone-parent children get along much more poorly with their parents and classmates than the general population of children (ratios of 1.51 and 1.63, respectively). As well, lone-parent children are comparatively delayed in their academic development as measured with the PPVT-R, than all children. These results suggest that lone-parent children ages 4 to 5 years-old are not as well developed in their ability to relate to their families and peers, or as ready for school and academic achievement as the general population of children.

**Table 3.3
Summary Outcomes for 4 to 5 Year-Olds**

Outcome Domains and Variables	Lone-Parent Children	All Children	Difference Ratio
<i>Health</i>			
◆ Does child have any long term conditions or health problems which prevent or limit their participation in school, at play, or in any other activity for a child of their age? (children are limited in their activities)	5.8	3.6	1.61
◆ In general, how would you rate child's health? (children rated good, fair and poor)	20.0	12.7	1.58
◆ Over the past few months, how often has child been in good health? (children in good health about half the time, sometimes, almost never)	6.1	4.8	1.27
◆ Does child have any long-term conditions diagnosed by a health professional? (children who have one or more)	19.2	19.5	0.98
<i>Behaviour</i>			
◆ Indirect Aggression Scale (children with scores 4 and above)	18.0	11.2	1.61
◆ Emotional Disorder / Anxiety Scale (children with scores 6 and above)	13.5	8.8	1.53
◆ Conduct Disorder / Physical Aggression Scale (children with scores 4 and above)	12.9	8.9	1.45
◆ Hyperactivity / Inattention Scale (children with scores 11 and above)	15.0	10.4	1.44
◆ Property Offences Scale (children with scores 3 and above)	16.1	11.3	1.43
◆ Prosocial Behaviour Scale (children with scores 17 and above)	7.0	11.4	0.61
<i>Relationships</i>			
◆ During the past 6 months, how well has your child gotten along with other kids, such as friends or classmates (excluding brothers or sisters)? (children who only get along: not well at all, not too well, or pretty well)	16.8	11.1	1.63
◆ During the past 6 months, how well has your child gotten along with his/her parents? (children who only get along: not well at all, not too well, or pretty well)	14.0	8.6	1.51
<i>Academic Achievement / Educational Experience</i>			
◆ PPVT-R (children with scores less than 85)	23.8	16.2	1.47
<i>Activities</i>			
◆ In the last 12 months, outside of school hours, how often has your child take part in unorganized sports or physical activities? (children who almost never take part or only take part once a month)	44.6	35.1	1.27
◆ In the last 12 months, outside of school hours, how often has your child taken part in any sports which involved coaching or instruction? (children who almost never take part or only take part once a month)	76.7	63.9	1.20
◆ In the last 12 months, outside of school hours, how often has your child taken lessons in music, dance, arts or other non-sport activities? (children who almost never take part or only take part once a month)	83.9	82.1	1.06
◆ In the last 12 months, outside of school hours, how often has your child taken part in any clubs, groups or community programs? (children who almost never take part or only take part once a month)	91.0	85.8	1.02
◆ In the past 12 months, outside of school hours, how often has your child played computer or video games? (children who almost never take part or only take part once a month)	47.0	47.9	0.98
◆ Does your child currently attend any nursery school, play group or other early childhood program or activity? (children who do attend)	24.0	30.1	0.80

The pattern of divergence between the general population of children and lone-parent children, however, is considerably less when observing the types of activities in which they participate. Four of the activities domain variables show little difference between the proportion of lone-parent children who rarely or never participate in a particular activity and the general population of children: organized sports involving a coach (ratio 1.20); music or dance lessons (ratio 1.06); clubs or groups (ratio 1.02); and playing computer or video games (ratio 0.98). Nonetheless, lone-parent children are not as likely to participate in unorganized sporting activities (ratio 1.27). The general population of 4 to 5 year-olds, on the other hand, are somewhat more likely to attend nursery school or early childhood program (ratio 0.80).

Overall, the information in Table 3.3 suggests that lone-parent 4 to 5 year-olds are not any less likely to take part in many social activities than the general population of children. In spite of this relatively positive result, lone-parent children suffer from considerably poorer behaviour and relationship scores, health and academic achievements. These results are very similar to those found for 2 to 3 year-olds, though not all the variables are identical.

3.3 Summary of Outcomes for 6 to 11 Year-Olds

As with our analysis of the previous two age groups, the results for 6 to 11 year-olds reveal that lone-parent children tend to perform comparatively poorly (Table 3.4). Many of the ratio outcomes reveal considerable differences between the results which lone-parent children obtain and those of the general population of 6 to 11 year-old children. Frequently lone-parent children are over 50 percent more likely to perform inadequately compared to all children. Where differences do not exist, most are in one general outcome domain — the activities domain. Of the seven variables where the ratio was less than 1.25, four are from the activities domain variables.

The health of lone-parent children tends to be overall poorer than the health of the general population of children, for 6 to 11 year-olds. They are more likely than the general population of older children to possess, lower rated health (ratio 1.41), and activity limitations (ratio 1.45). As well, they are less likely to experience good health for extended periods of time compared to all 6 to 11 year-old children (ratio 1.94). Nevertheless, lone-parent children do not experience any long term conditions to any greater degree than the general population of children (ratio 1.16).

As in the other age groups, the behaviour scale scores of 6 to 11 year-old lone-parent children differs for the most part, from that of the general population of children. Lone-parent children are prone to a much greater extent than all children, to score high on the negative behaviour scales: emotional disorder (ratio 1.74); property offences (1.72); conduct disorder (ratio 1.69); indirect aggression (ratio 1.58); and hyperactivity (ratio 1.49). However, there is little difference in the rate at which lone-parent children and all children are exhibit prosocial behaviour (ratio 0.95). These results parallel the behaviour scores obtained for 4 to 5 year-olds.

Our summary outcomes for the five variables in the relationship outcomes domain, demonstrate that lone-parent children tend to suffer in their social relationships compared to the general population of children. Lone-parent children are likely to get along relatively more poorly than the general population of 6 to 11 year-olds, with their school teachers (ratio 1.67), other children (ratio 1.44), and their parents (1.26). When they do associate with other children, lone-parent children are more apt than all children to associate with peers who get into frequent trouble, as perceived by their parent (ratio 1.57).¹² Nevertheless, both lone-parent and the general population of children are equally likely to be shy when meeting new children and making friends (ratio 0.84).

For each of the five variables in the academic achievements outcome domain, lone-parent children tend to perform poorly compared to all children. Lone-parent 6 to 11 year-olds, for example, are twice as likely to have repeated a school grade (ratio 2.00). As well, lone-parent children in relation to the general 6 to 11 year-old population, are more likely to receive special education (ratio 1.83) and their parents are more likely to have been contacted two or more times, regarding their behaviour at school (ratio 1.65). When administered an NLSCY math test, lone-parent children tended to perform more poorly than the general population of children (ratio 0.72). Lastly, lone-parent children tend to read books somewhat less frequently than all children (ratio 1.27).

¹² This particular variable was asked only of children aged between 8 and 11 years-old.

Table 3.4
Summary Outcomes for 6 to 11 Year-Olds

Outcome Domains and Variables	Lone-Parent Children	All Children	Difference Ratio
<i>Health</i>			
◆ Over the past few months, how often has child been in good health? (children in good health about half the time, sometimes, almost never)	6.6	3.4	1.94
◆ Does child have any long term conditions or health problems which prevent or limit their participation in school, at play, or in any other activity for a child of their age? (children are limited in their activities)	6.8	4.7	1.45
◆ In general, how would you rate child's health? (Child rated good, fair and poor)	17.3	12.3	1.41
◆ Does child have any long-term conditions diagnosed by a health professional? (children who have one or more)	33.4	28.9	1.16
<i>Behaviour</i>			
◆ Emotional Disorder / Anxiety Scale (children with scores 7 and above)	17.9	10.3	1.74
◆ Property Offences Scale (children with scores 3 and above)	13.9	8.1	1.72
◆ Conduct Disorder / Physical Aggression Scale (children with scores 4 and above)	19.8	11.7	1.69
◆ Indirect Aggression Scale (children with scores 4 and above)	21.8	13.8	1.58
◆ Hyperactivity / Inattention Scale (children with scores 10 and above)	15.3	10.3	1.49
◆ Prosocial Behaviour Scale (children with scores 18 and above)	10.9	11.5	0.95
<i>Relationships</i>			
◆ Since starting school in the fall, how well has your child gotten along with his/her teacher(s) at school? (children who only get along: not well at all, not too well, or pretty well)	12.5	7.5	1.67
◆ How often does your child hang around with kids you think are frequently in trouble? (children who only get along: not well at all, not too well, or pretty well)	18.5	11.8	1.57
◆ During the past 6 months, how well has your child gotten along with other kids, such as friends or classmates (excluding brothers or sisters)? (children who only get along: not well at all, not too well, or pretty well)	17.6	12.2	1.44
◆ During the past 6 months, how well has your child gotten along with his/her parents? (children who only get along: not well at all, not too well, or pretty well)	16.1	12.8	1.26
◆ When it comes to meeting new children and making new friends, how comfortable is your child? (children who are somewhat shy)	22.2	26.4	0.84
<i>Academic Achievement / Educational Experience</i>			
◆ Has your child ever repeated a grade at school? (children who have repeated)	11.2	5.6	2.00
◆ Does child receive special education because a physical, emotional, behavioural, or some other problem limits the kind or amount of school work he/she can do? (children who receive special education)	12.8	7.0	1.83
◆ Since child started school in the fall how many times have you been contacted by his/her school regarding his/her behaviour at school? (twice or more)	11.2	6.8	1.65
◆ How often does your child look at books, try to read on their own, or read for pleasure? (a few times a month to never)	17.7	13.9	1.27
◆ Math test (grades 2, 4 and 6) (children with highest scores: 14 and above)	9.8	13.6	0.72
<i>Activities</i>			
◆ In the last 12 months, outside of school hours, how often has your child taken part in any sports which involved coaching or instruction? (children who almost never take part or only take part once a month)	52.5	39.6	1.33
◆ In the last 12 months, outside of school hours, how often has your child take part in unorganized sports or physical activities? (children who almost never take part or only take part once a month)	25.9	22.3	1.16
◆ In the last 12 months, outside of school hours, how often has your child taken lessons in music, dance, arts or other non-sport activities? (children who almost never take part or only take part once a month)	74.4	68.1	1.09
◆ In the last 12 months, outside of school hours, how often has your child taken part in any clubs, groups or community programs? (children who almost never take part or only take part once a month)	77.1	70.5	1.09
◆ In the past 12 months, outside of school hours, how often has your child played computer or video games? (children who almost never take part or only take part once a month)	26.7	24.6	1.09

As stated in the introduction to this section, lone-parent children are just as likely as all children not to participate, or only participate infrequently, in many activities. There is little difference between the rate at which lone-parent children and all children do not participate or infrequently participate in: unorganized sports (ratio 1.16); music or dance lessons (ratio 1.09); clubs or community programs (ratio 1.09); or play computer or video games (ratio 1.09). However, lone-parent children do tend to be infrequent participants in organized sporting activities involving a coach (ratio 1.33).

While there is little difference between lone-parent and all children in regard to the variables of the activities domain variables, it is still the case that for the vast majority of the variables lone-parent children perform relatively poorly compared to the general population of 6 to 11 year-olds. In terms of their health, behaviour, academic achievement and relationships, lone-parent children are distinguished for the most part by poorer more negative scores, than the results for the general population. These conclusions are comparable to those found for 2 to 3 year-olds and 4 to 5 year-olds.

3.4 Review

In general, our analysis of the ratio of outcome cut-offs suggests that lone-parent children of all ages are relatively more likely to suffer poor levels of health and experience poor behaviour scale scores, when compared to all children of the same age. As well, older lone-parent children (4 to 5 years, and 6 to 11 years) experience more problems in their relationships and academic achievement than the general population of children with the same age. The only area in which lone-parent children perform relatively well when compared to the general population of children (for all ages), is the activities area.

It should be pointed out, however, that it need not be the same lone-parent children who perform poorly on each of the variables. For example, while one lone-parent child may have health problems, they need not also be the child who performs poorly on the emotional disorder scale. Indeed in a companion paper¹³ we investigate the extent to which particular lone-parent children do perform poorly on one or more outcomes. Nevertheless, the assumption that behavioural,

¹³ See the report of our second stage of research (footnote 10) which examines these factors.

relationship and educational experiences, may be interconnected is not without some support.¹⁴ Furthermore, our aim in this section has been to summarize single cut-off comparisons. In the next section we explore the extent to which the summary outcomes reflect the overall distribution of each outcome variable.

¹⁴ See Blum, Munroe H., *et al.* 1988; Wadsworth, J. I., *et al.* 1985; and McLanahan, S. and G. Sandefur. 1994.

4. Comparison of Selected Variable Distributions

As stated in our summary measure comparison of ratios, lone-parent 2 to 3 year-old children tended to do more poorly than the general population of children on health, and behavioural variable outcomes. This means of measurement, however, relies upon a single point comparison. What is also of interest is whether these differences tend to occur across the whole distribution? Presented in this section are selected distributions which qualified to meet our cut-off level by having a ratio equal to or greater than 1.25. Our task here, is to broaden the relationship so as to put the ratio comparisons in context. That is, while there may exist differences at a particular point on a distribution, do these differences continue along the distribution?

4.1 Variable Distribution Results for 2 to 3 Year-Olds

Observing the differences in scores for hyperactive and inattentive behaviour in children exhibited in Figure 4.1 suggests that lone-parent children are likely to score higher on the scale than all children. The scores are based on asking parents a series of questions designed to ascertain whether their child “can sit still, is restless or hyperactive?” or “is distractible, has trouble sticking to any activity?”

The threshold used in creating a summary statistic for this scale was a score of eight or above, representing the most hyperactive and inattentive tendencies. The figure shows that only 13.6 percent of all children tend to have the greatest hyperactive tendencies compared to 22.6 percent of lone-parent children (see also Table 3.2). Visual inspection of the whole distribution also shows considerable differences, with smaller proportions of lone-parent children included in the two lowest (most preferable) scores.

Figure 4.1
Comparative Scores on Hyperactivity-Inattention Scale (2-3 year-olds)

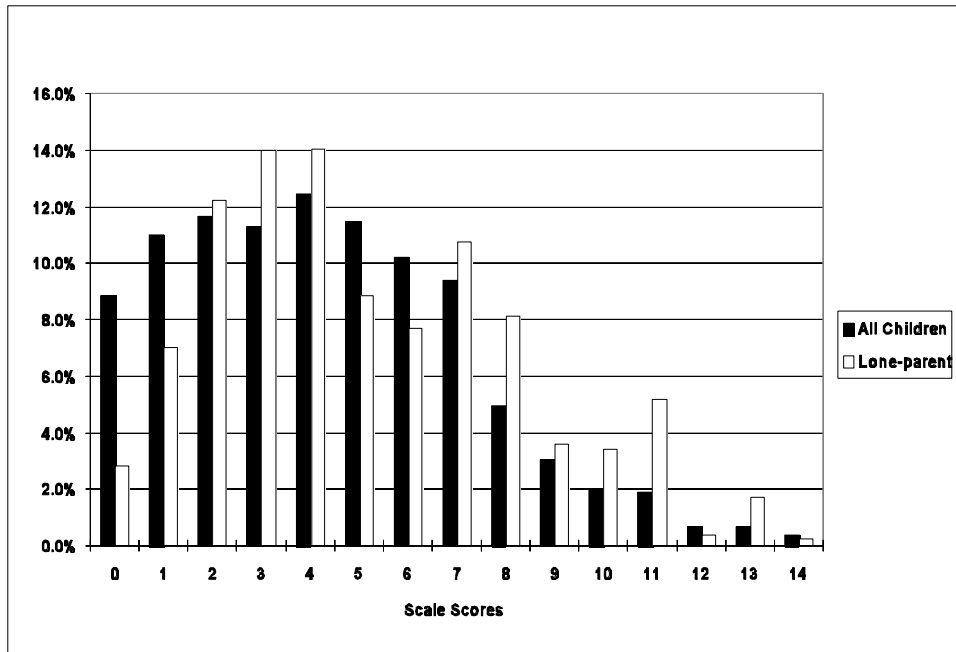


Figure 4.2
Comparative Scores on Emotional Disorder-Anxiety Scale (2-3 year-olds)

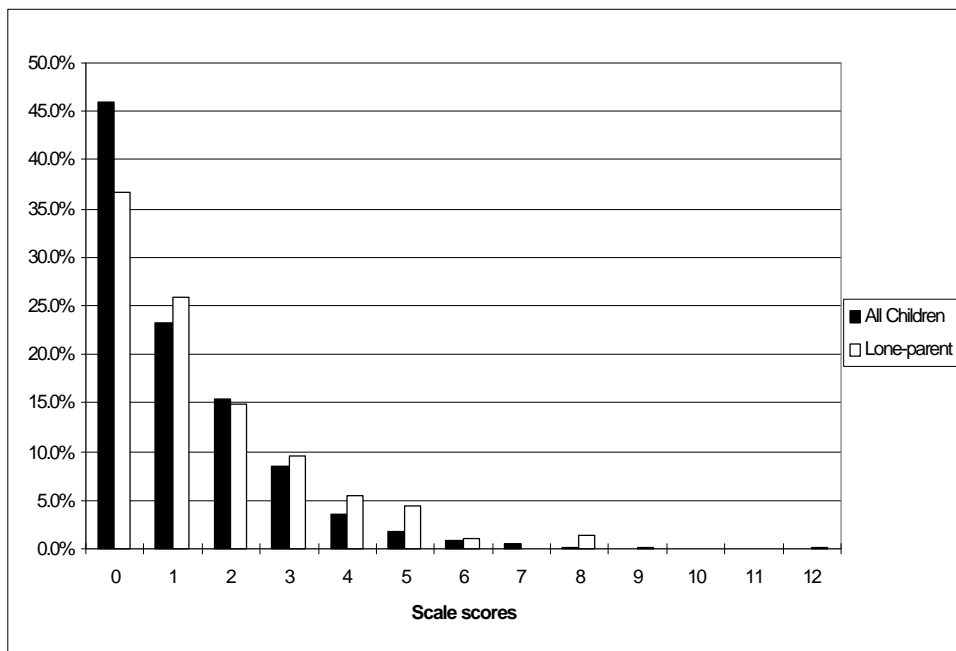


Figure 4.2 presents the distribution of childrens' scores based on a series of questions designed to determine tendencies towards emotional disorder and anxiety in children. The scale scores were based on questions such as: does your child seem "to be unhappy, sad or depressed?" Is your child "too fearful or anxious?" The results show that children in lone-parent families are more likely to exhibit higher levels of emotional disorders and anxiety when compared to the general child population.

For our summary statistic we selected a cut-off score of three or above on the emotional disorder-anxiety scale, which corresponds to 15.4 percent of all children and 22.5 percent of lone-parent children (see also Table 3.2). If we observe the distribution, it is clear that lone-parent children are more likely to score higher on the scale than all children. However, it should be noted that the overwhelming majority of both lone-parent and all children, have scores of less than 6, the mid-point of the scale.

Figure 4.3
Attendance at Nursery School, Play Groups or
Early Childhood Program (2-3 year-olds)

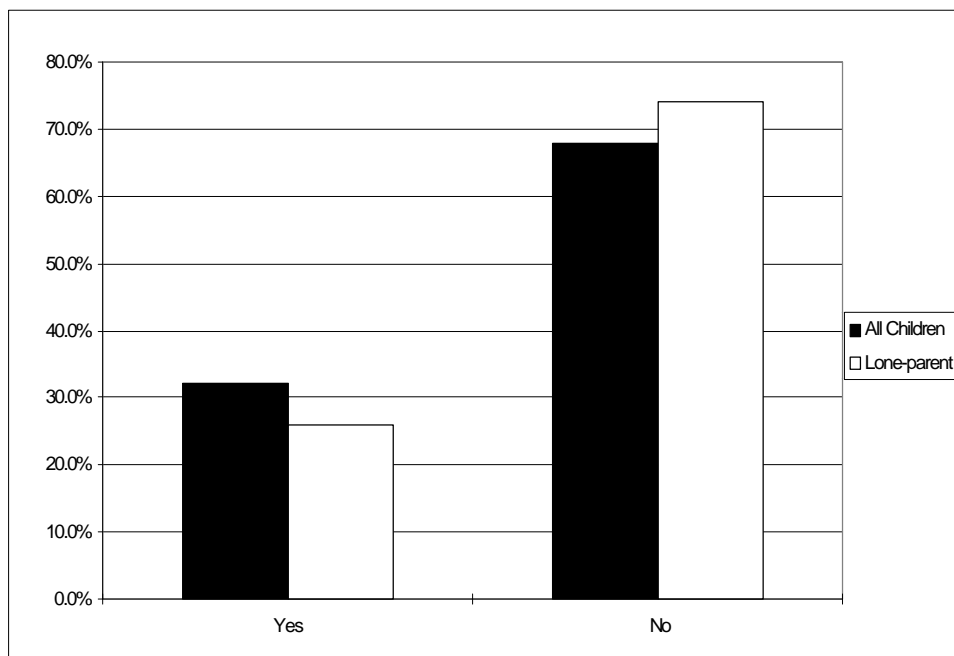


Figure 4.3 presents the results for participation in a play group, nursery school or any other form of early childhood activity. This variable is intended to capture a beneficial practice for acquiring social skills in early childhood. In the NLSCY this was a simple “yes/no” question, and while the difference is not great it is noticeable: 32.1 percent of the general population of 2 to 3 year-old children attended some form of early childhood activity, while only 25.9 percent of lone parent children did so (see also Table 3.2).

4.2 Variable Distribution Results for 4 to 5 Year-Olds

Among 4 and 5 year-olds, we see differences between lone-parent children and all children in three-quarters of the outcome measures examined. These differences are spread across the many domains of development such as health, behaviour, vocabulary skills, relationships and activities. However, relatively fewer differences occur in the activities domain.

Figure 4.4
Parental Assessment of Child’s Overall Health (4-5 year-olds)

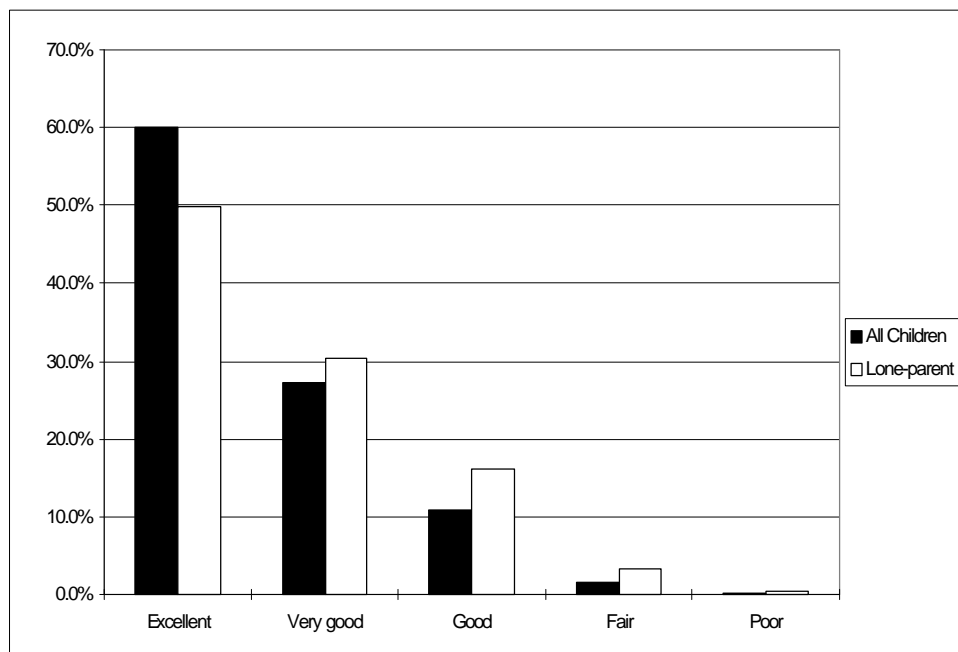


Figure 4.4 is based on parent responses to a question concerning their child’s overall health. Our summary statistic includes the weaker responses of “good, fair and poor.” Using this, we see that 20 percent of lone-parent children and only 12.7 percent of all children fall into this lower health category (see also Table 3.3). Our distribution reveals that substantial proportions of both lone-

parent children and the general population of children, have excellent health. However, lone-parent children are more likely to exceed the proportions of all children at each of the lower levels of health. Most importantly, lone-parent children are more likely to be rated as having one of the three lower levels of health.

Figure 4.5 presents the scale scores for children with tendencies towards indirect aggression, based on a series of questions. The higher the score the more this tendency prevails. We have used a cut-off of three or more, which corresponds to 11.2 percent of all children, and 18 percent of lone-parent children (see also Table 3.3). Interestingly, there are noticeably smaller proportions of lone-parent children represented at the two most desirable levels of this scale. Nevertheless, there are large proportions of lone-parent children who perform quite well on the scale. Relative to the results for all children, lone-parent children do tend to have higher scale scores.

Figure 4.5
Comparative Scores on the Indirect Aggression Scale (4-5 year-olds)

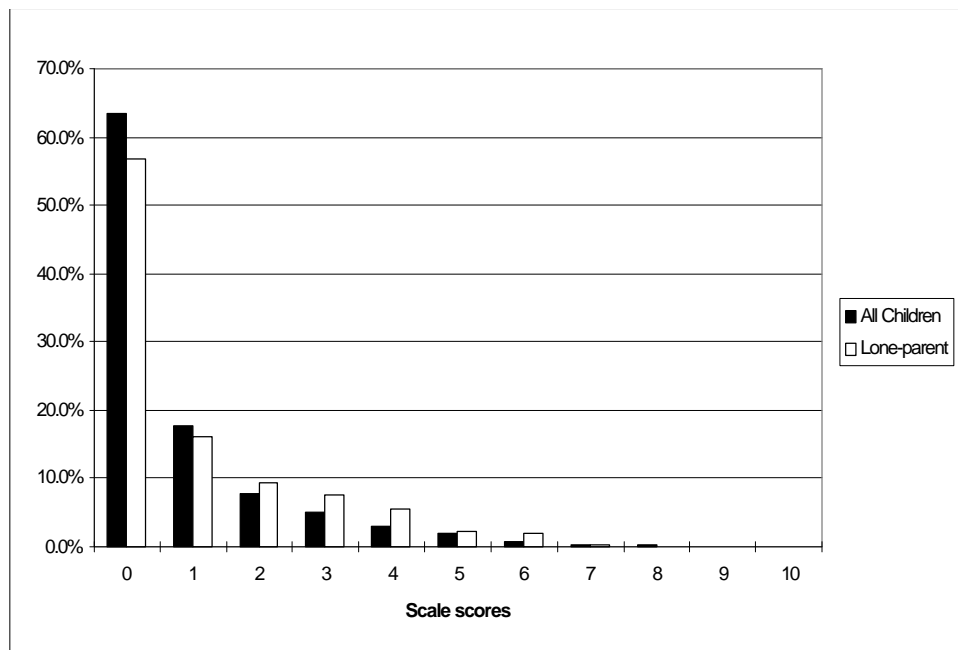


Figure 4.6 presents the results of a question designed to give an assessment of how well children are developing social relationships. Parents were asked during the past 6 months how well their child has gotten along with other kids, such as friends or classmates (excluding brothers or sisters). Using any response below and including “pretty well, occasional problems” as a cut-off, we find this corresponds to 14 percent of lone-parent children and 8.6 percent of all children (see also Table 3.3). The distribution of responses demonstrates that while large proportions of lone-parent children do get along very well, no problems with other kids, relatively more lone-parent children get along only pretty well or not too well. Very few of either the general population of children or the population of lone-parent children, were reported as not getting along well at all.

Figure 4.6
How Well Does Child Get Along with Other Children (4-5 year-olds)

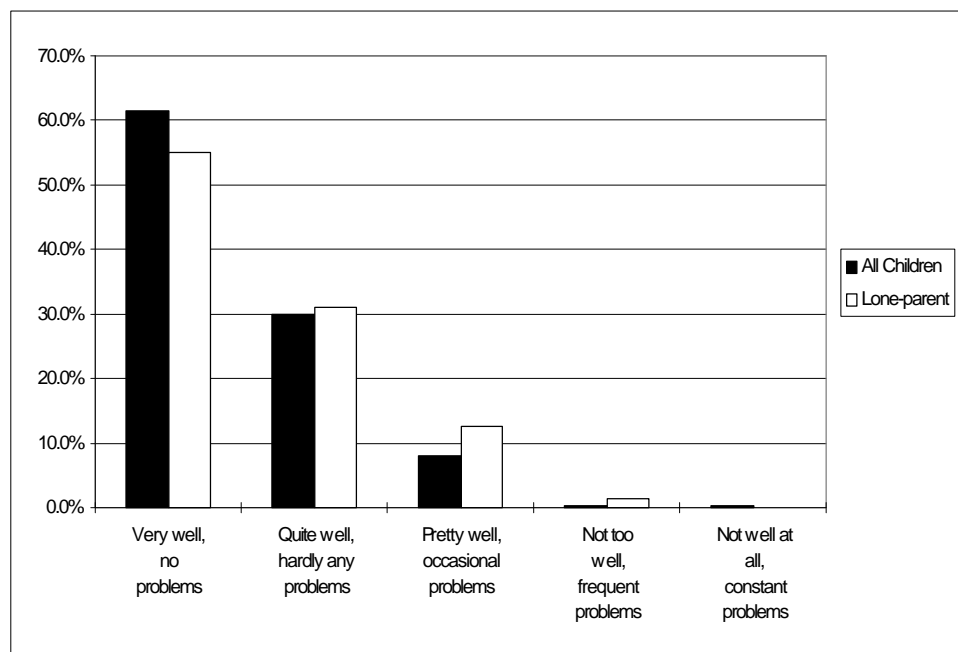
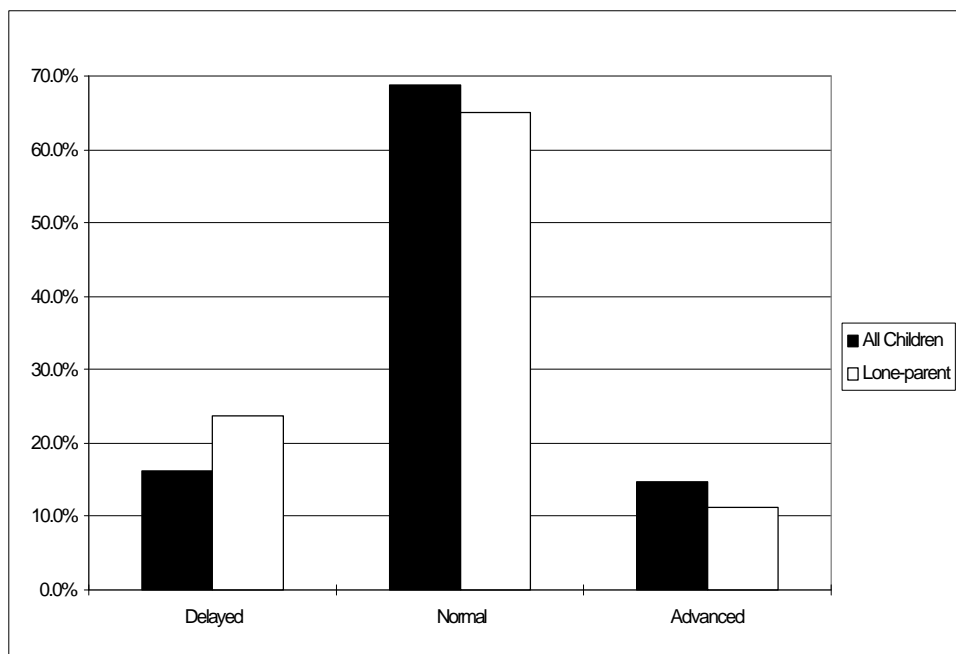


Figure 4.7 presents the results for one academic achievement outcome from the NLSCY, the home administered Peabody Picture and Vocabulary Test (PPVT). This test measures the receptive language skills of young children and scores are standardized into a scale [with a mean of 100 and standard deviation of 15]. Utilizing established clinical cutoffs, the standardized scores are divided into three groups: delayed development (scale scores less than 85); normal

development (scores between 85 and 115); and advanced development (scores greater than 115). The standardized distribution of scores shows that almost one-quarter (23.8 percent) of lone-parent children exhibit delayed receptive language skills compared to 16.2 percent of all children (see also Table 3.3). The figure also succeeds in demonstrating how lone-parent children do relatively poorly at the two higher levels compared to the general population of children.

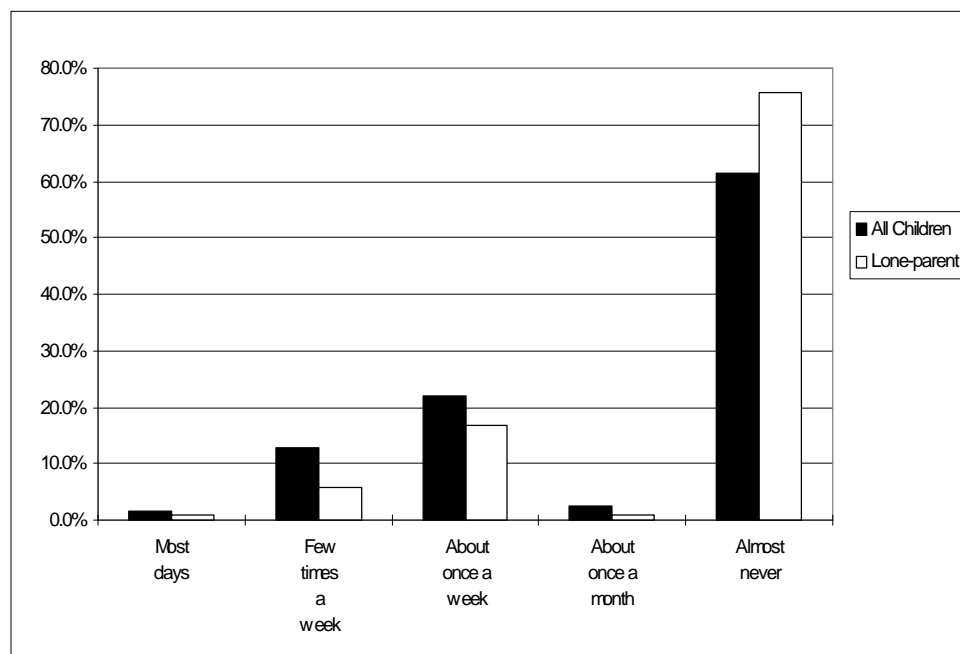
Figure 4.7
Comparison of Peabody Picture and Vocabulary Test Scores (4-5 year-olds)



While it is important to measure the academic success of children, the NLSCY also includes a number of questions regarding children's activities. These questions reveal whether children are developing non-academic skills in areas such as sports or the arts. Activities where children receive instruction are particularly important because they advance children's skills, where success builds self-esteem.

Figure 4.8 presents the results of the survey question, “In the last 12 months, outside of school hours, how often has your child taken part in sports which involves coaching or instruction. In other words, does the child participate in organized sports activity. Here there is quite a difference, with 76 percent of lone-parent children, versus 63.9 percent of all children almost never taking part (see also Table 3.3). Our distribution reveals, however, that moderate proportions of lone-parent children do take part fairly regularly in such activities from once a week to a few times a week. The figure also demonstrates that there are considerable proportions of children from both populations who almost never take part in organized sporting activities outside school.

Figure 4.8
How Often Child Participates in Organized Sports (4-5 year-olds)

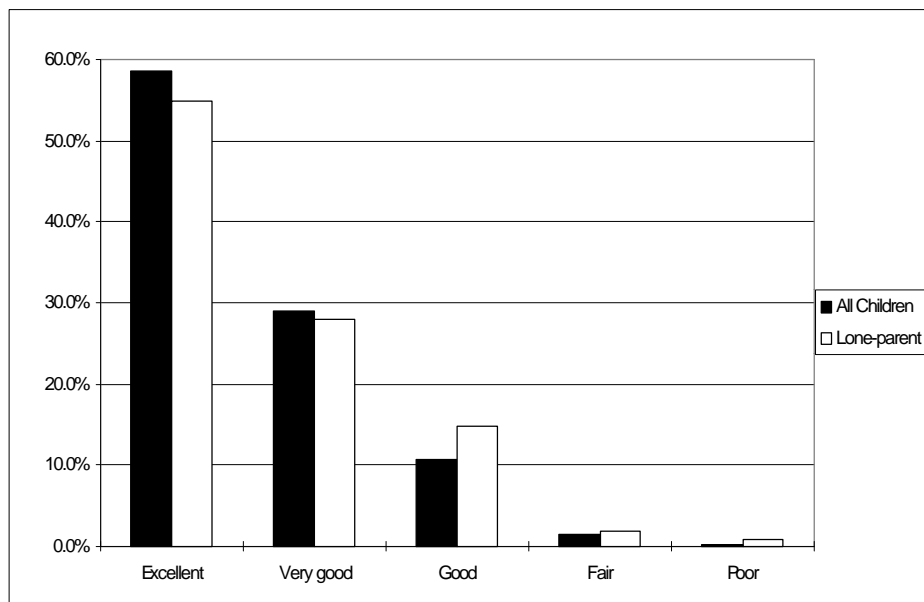


4.3 Variable Distribution Results for 6 to 11 Year-Olds

For the 6 to 11 year-old age group, we looked at 25 outcome indicators in five different areas: health, behaviour, relationships, academic achievement, and activities/skills. Lone-parent children tend to have less preferred outcomes than all children in all of these domains, though as mentioned, the activities domain of variables tended to show far fewer differences.

Figure 4.9 presents the distribution of parental responses to the question of how they would rate their children's health overall. We observe that 17.3 percent of children of lone parents are rated in the less preferred category of "good, fair or poor health" compared to 12.3 percent of all children (see also Table 3.4). However, when we look at the whole distribution of categories we see that for the most part, parents of children (both all children and lone-parent) aged 6 to 11 years report that their children are in excellent or very good health.

Figure 4.9
Parental Assessment of Child's Overall Health (6-11 year-olds)



Lone-parent children in this age group have poor behavioural outcomes when compared to the general child population. We present three examples below.

Figure 4.10 presents the scores for the extent to which children exhibit indirect aggressive behaviour which includes: saying bad things behind a person's back; getting others to dislike a person; or, when mad at someone, becoming friends with another as a form of revenge. Our summary statistic was based on a score of four or greater, and 21.8 percent of lone-parent children but only 13.8 percent of all children are likely to display scores at this level. Moreover, almost one-half (47.2 percent) of all children are likely to possess none of the indirect aggression

behaviours on which this scale is based as opposed to 39.2 percent of lone-parent children (see also Table 3.4). As well, our distribution demonstrates that lone-parent children are proportionately more likely to score from scale score 2 or above than all children.

Figure 4.11 presents the scale scores based on questions designed to measure the presence of behaviours associated with anxiety and emotional disorder, such as the extent of anxiety of a child; unhappiness of a child; and, whether a child is as happy as other children. The summary statistic for this variable is based on a score of seven or greater, and lone-parent children have a considerably greater representation at this level - 17.9 percent compared to 10.3 percent of all children (see also Table 3.4).

Moreover, 23.5 percent of all children exhibit none of the underlying behaviours that this scale is based on, while only 17.0 percent of lone-parent children are free of these underlying behaviours. As observed with indirect aggression in Figure 4.10, our distribution in Figure 4.11 reveals that lone-parent children are proportionately more likely to score higher on the scale than all children. Even if our cut-off had been as low as a scale score of four, lone-parent children would still have tended to perform more poorly than all children.

Figure 4.12 represents the conduct disorder-aggression scale scores which measure the presence of behaviour such as: getting into many fights; physically attacking people; or, threatening people. Using a cut-off score of four and above captures 19.8 percent of lone-parent children, and only 11.7 percent of all children (see also Table 3.4). The distribution of scores indicates that lone-parent children are more prone than the general child population to the presence of conduct disorder or physical aggression behaviours. At the other end of the scale, lone-parent children are also less likely to be free or nearly free of the underlying behaviours from which the combined scores for conduct disorder and physical aggression are derived.

Figure 4.10
Comparative Scores on Indirect Aggression Scale (6-11 year-olds)

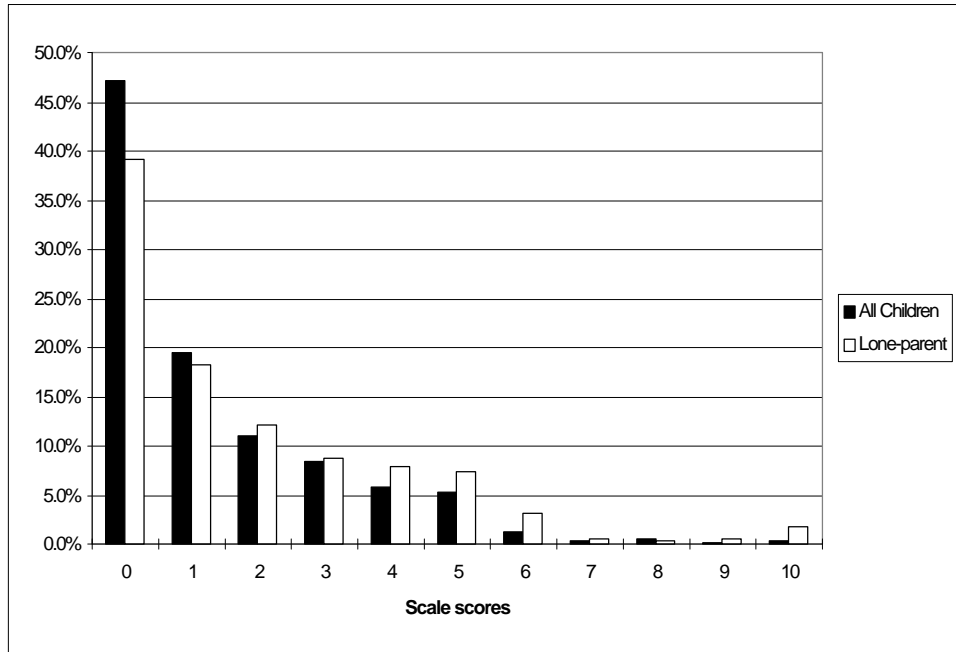


Figure 4.11
Comparative Scores on Emotional Disorder-Anxiety Scale (6-11 year-olds)

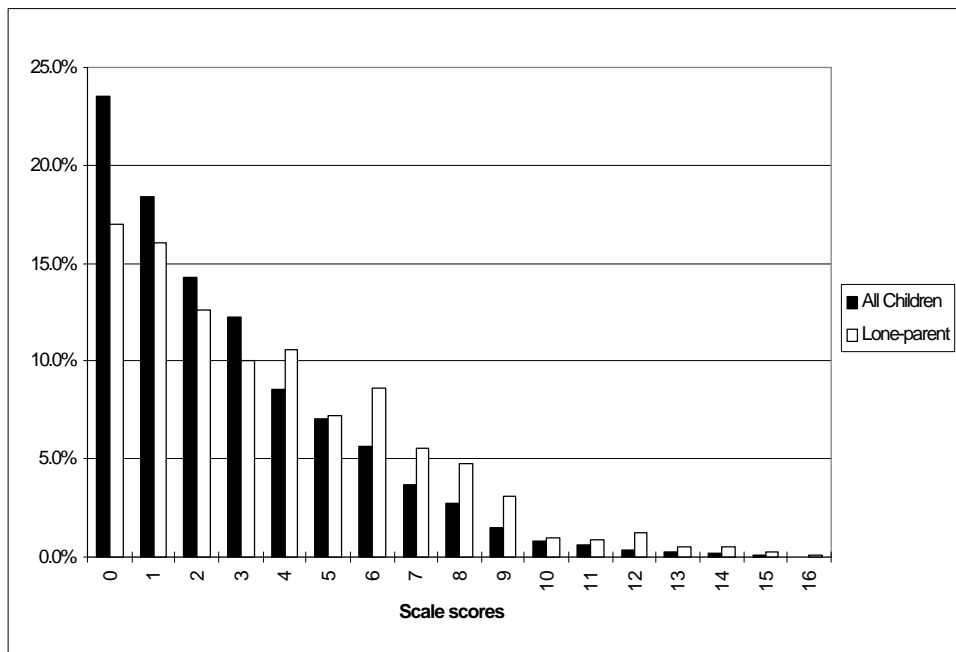
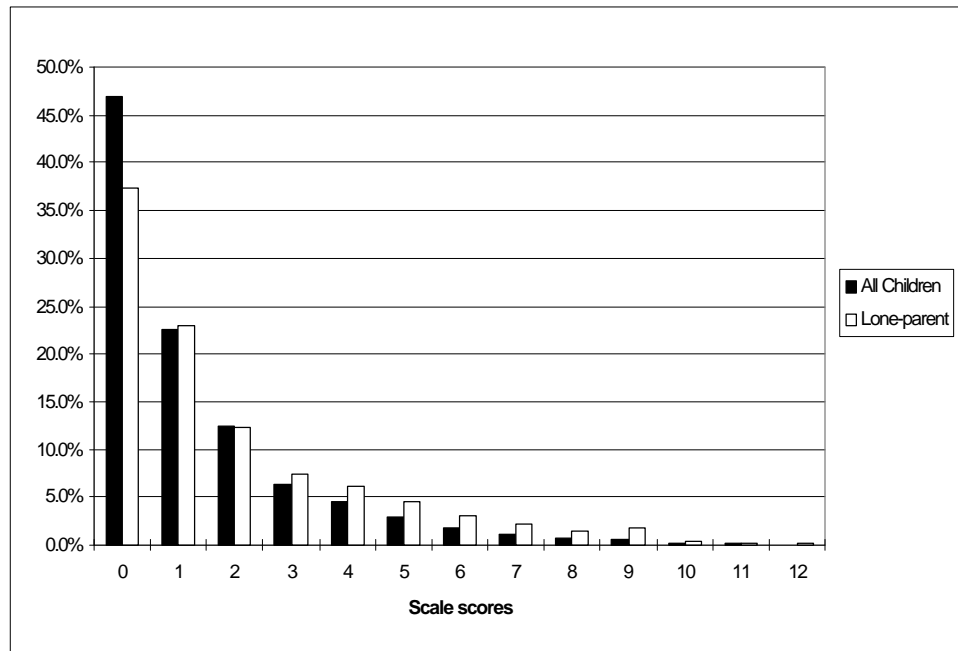
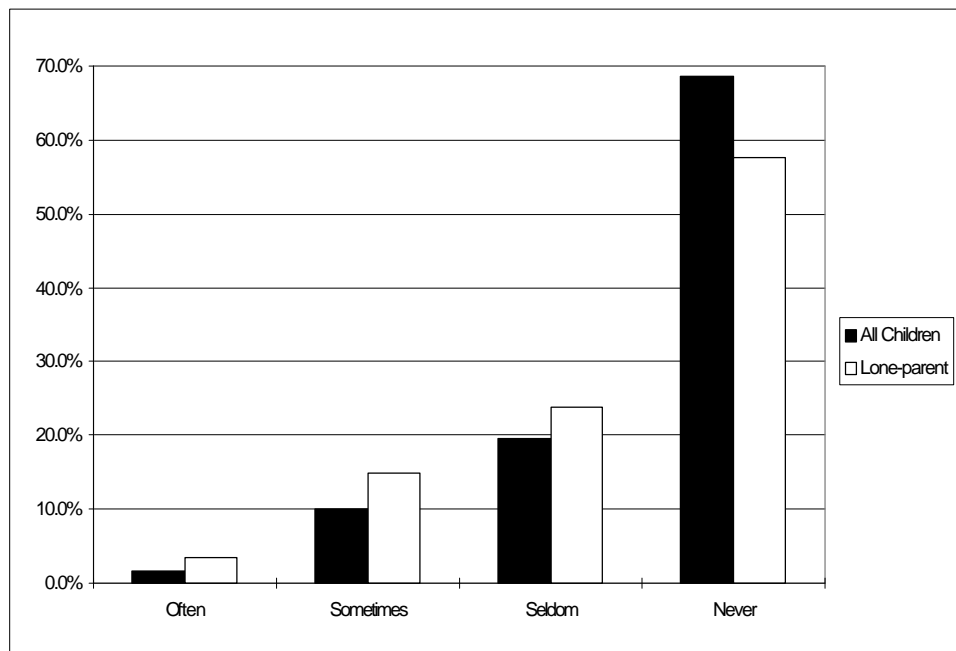


Figure 4.12
**Comparative Scores on the Conduct Disorder-
Physical Aggression Scale (6-11 year-olds)**



One measure of social relationships employed in the NLSCY pertaining to 8 to 11 year olds is based on the parental observation of whether their children hung around with children thought to be frequently in trouble. Our summary statistic groups children who are believed to hang around with children who get into trouble “often” and “sometimes”. Using this cut-off, the data in Figure 4.13 indicate that 18.5 percent of lone-parent children are in this category compared to only 11.8 percent of all children. At the other end of the spectrum, over two-thirds (68.6 percent) of all children never associate with children in trouble, while 57.7 percent of lone-parent children never do (see also Table 3.4). This finding supports the above noted observation of more behavioural problems among lone-parent children.

Figure 4.13
How Often Child Associates with Children Who are
Frequently in Trouble (8-11 year-olds)



The NLSCY contains a number of outcome measures of educational success. One key indicator is whether the child has ever repeated a grade. Figure 4.14 shows that 5.6 percent of all children and 11.2 percent - or twice the proportion - of lone-parent children have repeated a grade at school (see also Table 3.4). Nevertheless, while these results are some cause for concern, the information in Figure 4.14 also demonstrates that the overwhelming majority of both all children and lone-parent children have never repeated a school grade.

Finally, Figure 4.15 shows that a larger proportion of lone-parent children aged 6 to 11 years almost never (or at most once a month) participate in sports that involved coaching or instruction (i.e. organized sports). Over one-half (52.5 percent) of lone-parent children almost never (or at most once a month) take part, compared to 39.6 percent of all children (see also Table 3.4). However, as explained with regard to 4 to 5 year-olds in Figure 4.8, there are substantial proportions of lone-parent children who do in fact participate quite regularly in organized sports outside of school.

Figure 4.14
Has Child Ever Repeated a Grade at School? (6-11 year-olds)

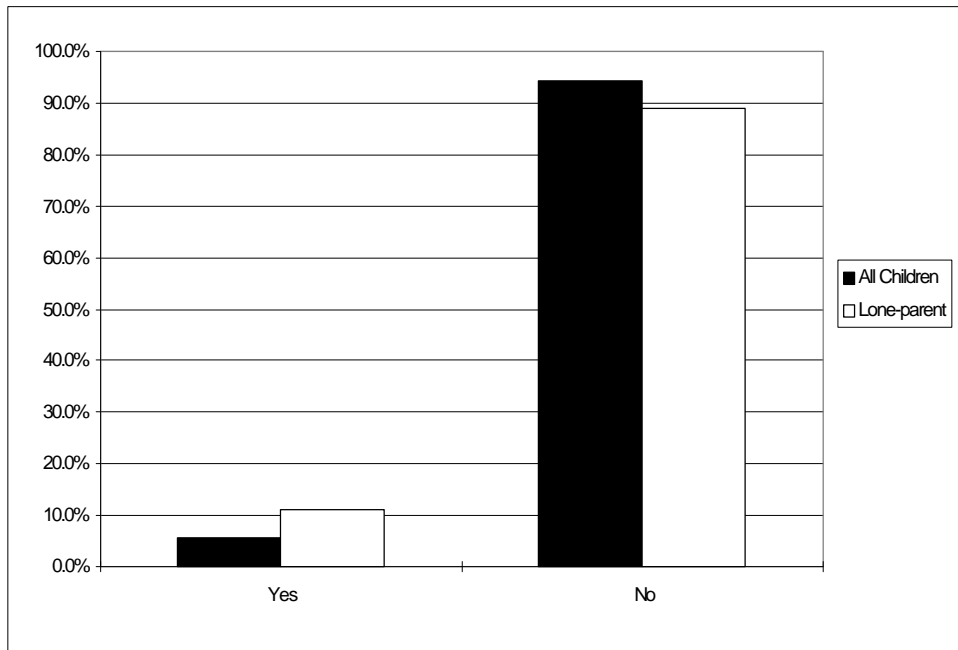
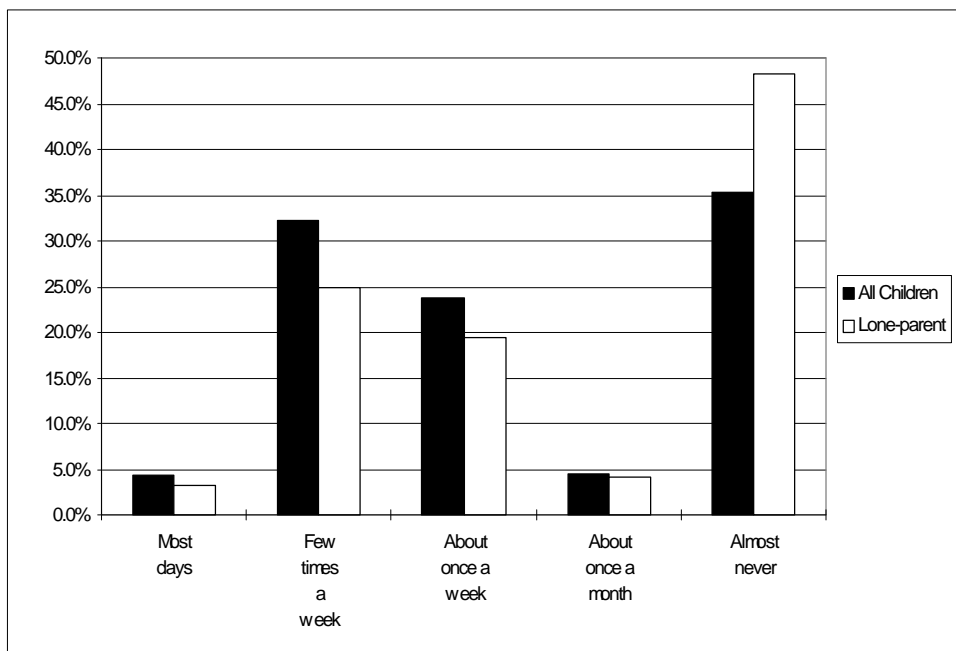


Figure 4.15
Has Child Taken Part in Any Sports Involving Coaching or Instruction (6-11 year-olds)



4.4 Review

An analysis of the distributions of selected variables for each of the three age groups (2 to 3 years, 4 to 5 years, and 6 to 11 years) reveals that our point summary cut-off measures do capture differences between all children and lone-parent children. However, these differences can be complemented by observing the overall context of the distributions for the variables. As we have seen, many lone-parent children do not perform poorly on the behavioural scales and many do participate in organized sporting activities. Nonetheless, our observations of the overall distributions did not over-turn our original conclusions from the analysis of Tables 3.2, 3.3 and 3.4. While not all lone-parent children are performing poorly, there are relatively larger proportions who do, in comparison to the general population of children.

5. Summary of Findings

First round results from the NLSCY suggest that the children of lone-parent families, compared to all children, appear to face slightly greater potential development difficulties. Based on a statistical examination of 30 distinct intervening and outcome variables (which combined for 55 age-specific variables) lone-parent children reported poorer outcomes in 38 areas. However, even in these 38 instances, the differences, while observable statistically, in many cases could not be described as outstanding. In the remaining 17 areas, developmental outcomes of lone-parent and all children were largely indistinguishable.

The developmental areas where lone-parent children seem to fare relatively poorly, when using the general population of children as the benchmark, is in behavioural outcomes involving variables such as hyperactivity, physical aggression, and emotional disorder. They also score less well on the relationship measures, including whether they are getting along with friends or parents. Educational outcomes such as repeating a grade, receptive language skills, and their health, are other areas where lone-parent children tended to perform more poorly than all children. However, when it comes to their participation in extra-curricular activities, except for attending nursery school or participating in organized sports, there are few noticeable differences between lone-parent and all children.

We find the same pattern in our comparison of the variable distributions of outcomes for each of the age groups: children aged 2 to 3 years, 4 to 5 years, and 6 to 11 years. The variable distributions, however, reveal that while there is some cause for concern regarding those lone-parent children who perform relatively poorly, there are still very large proportions of lone-parent children who perform quite adequately on the variables in each domain.

This paper reveals the variation in outcomes that exist among lone-parent children, the points where their developmental patterns converge and diverge from the general child population. There is wide variation within the lone-parent population for many of these variables, even on those variables where the distribution of outcomes among lone-parent children is skewed toward greater vulnerability, as the figures graphically illustrate. Moreover, this analysis helps us to pinpoint the specific areas where lone-parent children appear to be more vulnerable to negative

long-term outcomes. Similarly, it leads to other questions about the possible reasons behind the specific patterns of variation we observe in the lone-parent child population, questions which we take up in a companion paper.

6. Broad Policy Implications

Our analysis shows that children living in lone-parent households exhibit on average, poorer developmental outcomes over quite a wide range when compared to the outcomes of the child population in general. Of the 55 outcome variables examined, there were unfavourable discrepancies of 25 percent or more in the summary “scores” in 38 cases (69 percent). This strongly suggests there are some factors associated with living in a lone-parent environment that prejudices child development. It does not mean that lone-parenthood *per se* is the main factor, but that there is most likely a constellation of factors strongly associated with lone parenthood.¹⁵

Improving child behaviour should have a top policy focus. This area of child development reveals the biggest and most consistent discrepancies across all age groups. Hyperactivity, anti-social behaviour, aggressiveness, emotional disorder all pose more serious developmental problems for children in lone-parent families.

Among 6 to 11 year olds the biggest discrepancies are found in the area of academic achievement where twice as many children from lone-parent families have repeated a grade, and 1.8 times as many are receiving special education due to certain developmental problems.

High priority in policy terms should also go to improving the health of children, here the discrepancy between outcomes for lone-parent and all children is large and widens steadily with age.

Where lone-parent children do not appear to show as great a disadvantage is in their participation in non-academic pursuits such as sports, cultural and club activities. Among 6 to 11 year olds, lone-parent children do participate less in five different areas, but only in one (sports involving coaching or instruction) does the discrepancy compared to all children exceed 25 percent

Our research shows that poorer outcomes do not appear to disappear with age, in fact just the reverse seems true. Among 2 to 3 year olds, unfavourable discrepancies (25 percent or more) in

¹⁵ See the report of our second stage of research (footnote10) which examines these factors.

outcome scores appear in 55 percent of the outcomes. This rises to 74 percent of the cases for 4 to 5 year olds and 72 percent for 6 to 11 year olds. This progression supports early intervention.

From a public policy perspective, our findings strongly support using lone-parenthood as a marker or guide for focussing policy initiatives, keeping in mind an important fact. Our work shows there is a wide distribution of outcomes among children living in lone-parent families, suggesting that not all lone-parent families and their children require assistance. So while lone-parent families can be used as a guide to where policy assistance might have the highest pay-off, it does not entail a “blanketing” of lone-parents with intervention initiatives. Care must be taken not to stigmatize lone-parenthood as a family structure.

Appendix

Data Quality of the National Longitudinal Survey on Children and Youth

The two major forms of error affecting any survey are sampling error and non-sampling error. Sampling error refers to the difference between estimates based on the surveyed participants and the results from a complete count of the population. Non-sampling error refers to any error which is unrelated to sampling such as: interviewer error in asking the survey questions; respondent error in answering the questions; or survey tabulation and processing errors.

Overall the data quality of the NLSCY is reasonably good, with approximately 86 percent of sampled households responding. Where differences between responding and non-responding households did exist, weighting adjustments were carried out by Statistics Canada to alleviate many of the problems. There are, however, some non-sampling response rate data quality concerns. Two variables affected by this are the PPVT-R, and the Math Test. As well, there are some important problems with the data gathered from the teacher survey component.

The completion rate for the PPVT-R, while lower than anticipated, still attained a response rate of 88.8 percent for 4 and 5 year-old children. In order to assess possible response bias to the PPVT-R, Statistics Canada performed a statistical comparison of responding and non-responding children. They found there to be little difference between these two groups with regard to household income, parental education, work status or family type. Significant differences did, however, exist between the responding and non-responding groups for some variables such as sex of child (girls were more likely to respond), and when run against a number of the behaviour scales such as hyperactivity and Prosocial behaviour (non-respondents tended to have slightly lower average behaviour scores). What do these differences tell us? Simply that caution must be exercised when comparing the PPVT-R scores by the sex of child or by the behaviour scale scores.

Do these differences tell us anything about how family type is related to the response bias for the PPVT-R? Fortunately, Statistics Canada found that the parental status is not related to the

Appendix (continued)

response bias. Thus, lone-parent, two-parent, and no-parent children were just as likely to have responded as to have not responded to the PPVT-R. As a result, we believe that use of the PPVT-R is justified in the present study provided that the response bias problems are borne in mind for later analysis.

Many problems of a similar nature also exist for the Math test variable. All children in grade 2 or above were to complete a test of mathematical computations. Unfortunately, the math test data released in the first wave of cycle 1 NLSCY information caused some concern regarding data quality: only 50.5 percent of children eligible to complete the math test did so. A number of reasons explain the low response rate: teacher non-response to the math test request; lack of a parental consent form for completed tests; and refusal by the parent or school board to allow the test to be administered.

A response bias test by Statistics Canada determined that non-respondents tended to be children from lower income households, children who had problems in school, or who did poorly academically. As well, for those children who did complete the math test, children from upper income households were more likely to obtain higher average math test scores. Further analysis of the data revealed that the math test itself was flawed - too many children, particularly those in grades 3 and 5, obtained perfect scores (thus imposing a "ceiling" effect. Statistics Canada concluded from their response bias testing that there was likely an over-estimation of the average math test scores in comparison to scores that would have been obtained if the whole sample had responded. Extreme caution must be exercised in using these data. Nevertheless, our decision to use these data was based on the fact that it was a major outcome variable. Any conclusions based on an analysis of the data are, however, tentative given the nature of the data.

In addition to the above concerns regarding the results of single questions, data quality concerns affect all of the questions from the teachers and principals questionnaires. As with the math test question, these questionnaires had a low response rate, approximately 50 percent. We elected not to include these data in our paper.

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