

3. Methodology

3.1. Survey Instrument

Questions for the Toronto Perinatal and Child Health Survey were provided to Compustat by TPH. In general, the survey was designed to collect data on a variety of topics relevant to child health and development outcomes, including child's health status, breastfeeding, childhood injuries due to falls, child's participation in physical activity, smoking in the home, parenting behaviours and practices, child food security, parental depression, and child's dental health. Demographic information about the parent who responded to the survey was also collected.

Items were included as part of the survey on the basis of their relevance to TPH programs in the following areas: Reproductive Health, Child Health, Dental Health, and Healthy Lifestyles including Nutrition, Physical Activity, Tobacco Use and Prevention and Injury Prevention. Items were also included on the basis of feasibility in gathering valid and reliable estimates over the telephone. In addition, the process in identifying the survey content areas was based on the principles that the data should be consistent with the 1997 and/or (draft) 2001 Mandatory Health Programs and Services Guidelines and should fill data gaps not currently met by other surveys.

Some survey items were taken from existing sources such as the National Longitudinal Survey of Children and Youth (NLSCY), which was used as a source for items pertaining to child health status, birth information, parenting practices, and parental depression. Most items pertaining to breastfeeding were taken from the Canadian Community Health Survey (CCHS) and the Public Health Research, Education and Development Program (PHRED) Benchmarking Support Document: Provincial Breastfeeding Survey. Food security items were obtained from the USDA Food Security Module, and demographic questions were based on those used in the NLSCY, the RRFSS, and the CCHS. In addition, other questions were developed by representatives from the different TPH program areas, staff in the Health Information section, and other staff from the Planning and Policy unit at Toronto Public Health. The initial version of the survey was refined on the basis of pilot testing, as described below. The final survey was comprised of 90 items and took an average of 20 minutes to complete. The survey was approved by Toronto Public Health's Policy for Evaluation and Other Research Endeavours Review Committee.

3.2. Target Population and Sampling

The target population for this survey was City of Toronto families that included at least one child six years of age or younger. Sampling was conducted through random-digit dialing (RDD). Specifically, a RDD sample of locations within the City of Toronto area was obtained from Survey Sampling Inc., a company that

specializes in the RDD method. The particular method involves increasing the last digit in the sampled telephone number by one, ensuring that households with recent listings and unpublished numbers are included in the sampling frame. The RDD method is designed to maximize sample representativeness.

If the survey respondent indicated that he/she was the birth parent, step parent, common-law parent, adoptive parent, or foster parent of the child, and the reference child regularly lived at least part of the time in the potential respondent's home, the survey progressed according to the format shown in Appendix B.* If the respondent indicated that there was more than one child aged 0-6 years old in the home, then a reference child was randomly selected by asking the respondent to answer the survey questions regarding the child who would have the next birthday. In the case of twins, the interviewer instructed the respondent to answer questions with reference to either the youngest or the oldest twin, alternating the request.

3.3. Pilot Testing

The pilot test was conducted from February 18-20, 2003. During this period, six experienced interviewers used a Computer-Assisted Telephone Interview (CATI) system to call City of Toronto RDD telephone numbers between the hours of 9:00 a.m. and 9:00 p.m. A total of 1,658 telephone calls were made to obtain 20 completed surveys.

On the basis of the pilot testing, TPH, in consultation with Computsat, refined the survey instrument in terms of item wording and logic for skip-patterned items. Specifically, alternate wording was added to some parenting and depression scale items for use, if necessary, to increase comprehensibility. In addition, items were added to verify responses including parent's marital status and child's birthweight. The final version of the structured telephone interview is attached as Appendix B.

3.4. Interviewer Training

A standardized procedure was employed to ensure that all telephone interviewers had complete familiarity with the details of the survey and the CATI system of data entry. Each interviewer was trained and periodically monitored throughout the interviewing process. A total of 25 interviewers were trained specifically for this project. In addition, 2 supervisors and a manager were available to oversee the work of 3 to 12 interviewers working simultaneously.

Each interviewer was provided with a detailed Interviewer Protocol package, which details the procedure for telephone interviews (see Appendix C). Training included a review of the survey by the interviewer and a supervisor/manager, as well as

* Note that, because all persons who completed this survey were either a birth parent, step parent, common-law parent, adoptive parent, or foster parent to a child between the ages of 0 to 6 years who was living with them at least part of the time, persons who completed the survey will be referred to as "parents" or "respondents" interchangeably for the remainder of this report.

ample time for the interviewer to become familiar with all aspects of the survey. Interviewers rehearsed the procedure with a minimum of seven different scripted versions of the survey, which varied in terms of skips and flow of the responses. After the paper-based training sessions, it was observed that some interviewers needed to become more familiar with the logic and flow of the survey, and required continued practice reading the proper options. These issues were addressed with interviewers through discussion and further review and practice with the survey both individually and in groups.

During the pilot testing, interviewers demonstrated patience and rapport with respondents including individuals who had English as a second language and those facing distractions such as a small child present. Issues pertaining to correct reading of the survey and not leading respondents based on assumed responses continued to be addressed through additional practice and extensive monitoring with individual feedback from a supervisor/manager through the early implementation of the survey.

3.5. Data Collection

3.5.1. Calling Procedure

The Toronto Perinatal and Child Health Survey was administered during the period of March 1, 2003 through April 7, 2003. Calls were made at various times of the day and week, weekdays between 9:00 a.m. and 9:00 p.m., and weekends between 9:00 a.m. and 4:00 p.m. Up to 10 call attempts were made to each RDD number; if no contact was made after 10 attempts, then the number was deemed “terminated.”

A standard script which explained the nature and purpose of the survey was used. The interviewer introduced the survey by stating that it was being conducted on behalf of TPH and that the purpose was to obtain information to improve understanding of the factors that affect children’s health. Respondents then were asked if there were any children in the home aged 0-6 years. Respondents who affirmed this were asked if they would be willing to complete the survey. At this point in the procedure, potential respondents were told that their decision would in no way affect any of the services they may receive from any health unit, and that they may chose not to answer any question and/or chose to end the interview at any time. For respondents who indicated that they would be willing to complete the survey, the survey progressed according to the format shown in Appendix B. All data for the survey were entered via the customized CATI system, which includes automatic skips and verifications to improve accuracy.

3.5.2. Call Monitoring

Between 5% and 10% of all calls were monitored by Compustat supervisors or management. Interviewers were monitored more intensely during their first several

interviews. Additional periodic monitoring of all interviewers took place throughout the entire survey process.

Monitoring of interviewers consisted of ensuring that there was: (1) proper qualification of respondents (in terms of being a parent to a child aged 0-6 years who was living in their home at least part of the time), (2) correct reading of the survey, (3) lack of bias (not leading respondents), and (4) accurate data entry. Feedback was provided to interviewers to ensure that the survey was being administered as intended and that the Interviewer Protocol was being followed (see Appendix C).

3.5.3. Call Dispositions and Response Rate

During the calling period, a total of 73,775 calls were made in order to obtain 1000 completed surveys. Up to 10 call attempts were made for each of the 23,046 telephone numbers selected from the sampling frame. Table 1 shows the call disposition statistics for the Toronto Perinatal and Child Health Survey.

Table 1: Call Dispositions

<i>Call Type</i>	<i>Abbreviation</i>	<i>Frequency</i>	<i>Percent</i>
Complete	CO	1000	4.3%
Refused	RF	1043	4.5%
Terminate	TE*	2631	11.4%
Hung Up	HU	785	3.4%
Line Busy	LB	7	0%
Language Barrier	LA	822	3.6%
Call Back	CB	55	0.2%
Partial	PT	11	0%
Answering Machine	AM	123	0.5%
No Answer	NA	395	1.7%
Not Eligible – Business	NE/B	4587	19.9%
Not Eligible – No Children	NE/NC	8573	37.2%
Wrong Number	WN	173	0.8%
Not in Service	NS	2862	12.4%

In order to calculate response rate, the eligibility of each call must be taken into account because only a selected sub-population of Toronto was targeted for calling (i.e., households with children aged 0-6). Therefore, ineligible numbers are not included in the calculation of the overall response rate. Of the call dispositions displayed in Table 1, the known ineligible calls are the not eligible/business and the not eligible/no children numbers. Thus, for known ineligible calls:

* The “terminate” call disposition means that no contact was made after 10 call attempts to that number. Call disposition definitions are further detailed in the Interviewer Protocol in Appendix B.

$$\text{INELG} = \text{NE/B} + \text{NE/NC} = 4587 + 8573 = 13160.$$

Of the call dispositions displayed in Table 1, known eligible calls are the completed calls, the partial calls, and the call backs. Thus, for known eligible calls:

$$\text{ELG} = \text{CO} + \text{PT} + \text{CB} = 1000 + 11 + 55 = 1066.$$

Of the call dispositions displayed in Table 1, the call dispositions with unknown eligibility are the refused, terminated, hung up, line busy, language barrier, answering machine, and no answer calls. Thus, for unknown eligibility calls:

$$\begin{aligned}\text{UNKELG} &= \text{RF} + \text{TE} + \text{HU} + \text{LB} + \text{LA} + \text{AM} + \text{NA} \\ &= 1043 + 2631 + 785 + 7 + 822 + 123 + 395 = 5806.\end{aligned}$$

For response rate calculations, it was assumed that the proportion of these 5806 call dispositions that were eligible was the same as it was in the rest of the sample. This proportion, or “eligibility rate” was calculated to be:

$$\begin{aligned}\text{ELG RATE} &= \text{ELG} / (\text{ELG} + \text{INELG}) = 1066 / (1066 + 13160) \\ &= 0.0749 = 7.49\%\end{aligned}$$

The eligibility rate is then applied to the UNKELG call dispositions to obtain an estimated eligibility for the unknowns:

$$\text{ESTELG} = \text{UNKELG} \times \text{ELG RATE} = 5806 \times 0.0749 = 434.87.$$

The response rate (RR) for the survey therefore is calculated according to the following formula:

$$\begin{aligned}\text{RR} &= \text{CO} / (\text{ELG} + \text{ESTELG}) = 1000 / (1066 + 434.87) \\ &= 1000 / 1500.87 = 0.6663\end{aligned}$$

Thus, the overall response rate for the survey is 66.63%.

3.6. Analysis

First-level data analysis for this survey includes presentation of descriptive statistics in tables, text, and figures, as appropriate. Second-level analysis for group comparisons consists of crosstabs with chi-square analysis for categorical data, and t-tests and one-way analysis of variance for continuous variables. For significant F-tests, follow-up multiple pairwise comparisons with a Bonferonni correction were conducted. Pearson correlation coefficients were calculated in

order to measure the strength of association between the parenting practices and depression scales that were included as part of the survey.

For the reporting of chi-square results, the calculated chi-square value is followed by two subscripts which represent the degrees of freedom and the total number of observations (sample size) for the test (e.g., $\chi^2_{(x, y)}$ where x = degrees of freedom, and y = sample size). In the case of 2 x 2 crosstabs with any expected frequencies of < 5, Fisher's Exact Test is reported. For t-tests and F-tests, the test value is reported followed by the subscript of degrees of freedom.

Respondents who did not provide a response to a specific survey item (i.e., refused to respond or responded "don't know") were excluded from the relevant analysis for that item. Furthermore, for the food security scale, the depression scale, and the two parenting practices scales, scores were calculated only for respondents who provided responses that could be coded according to the scoring procedure for each of the relevant items on the scale. Thus, respondents who did not provide a response to one or more scale items (i.e., refused to respond or responded "don't know") are excluded from the relevant analysis for that scale.

The .05 level of significance was observed for all tests of significance and confidence intervals (CI's). Percentages are presented to one decimal place, while measurements for continuous data and test scores are presented to two decimal places (and to three decimal places in the case of some p-values). Data were analyzed using SPSS/PC statistical software, Version 8.