

Child Interviewing Practices in Canada: A Box Score from Field Observations

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Abstract A field study of interviews with child witnesses and alleged victims was conducted. The National Institute of Child and Human Development (NICHD) codebook served as the framework to examine a sample of 45 interviews with children ranging in age from three to 16. Results showed that pre-substantive practices were observed rarely. An examination of the questions asked during the substantive phase revealed that, on average, 40% were option-posing, 30% were directive, and 8% were invitations. Invitations produced the longest interviewee responses and the largest number of details that were central to the investigation. The implications of these findings for interviewing practices and policy are discussed.

Keywords Child interviewing · NICHD protocol · field study

Legal practitioners once thought that children were incapable of offering sound eyewitness testimony because, relative to adults, they have weak memories, are highly suggestible, and have incomplete language development (see Ceci & Bruck, 1993; Larsson & Lamb, 2009; Yuille, Hunter, Joffe, & Zaparniuk, 1993 for historical views of child eyewitnesses). That school of thought has now been replaced by a more positive view because there is much compelling empirical

evidence that children are capable of offering detailed and accurate testimony (e.g., Orbach, Hershkowitz, Lamb, Sternberg, & Horowitz, 2000; Sternberg, Lamb, Orbach, Esplin, & Mitchell, 2001). In fact, research has shown that children as young as four years old can be exemplary witnesses (Davies & Westcott, 1995; Lamb, Sternberg, Orbach, Hershkowitz, & Horowitz, 2003; Larsson & Lamb, 2009). There is also undisputable evidence that the quantity and quality of a child's account depends on the interviewer's use of evidence-based practices. Unfortunately, for a variety of reasons (e.g., lack of training, limited feedback), interviewers do not follow best practices often (e.g., Cyr & Lamb, 2009; Lamb et al., 2009; Myklebust & Alison, 2000; Price & Roberts, 2011); which ultimately raises serious concerns about the quality of the legal decisions and outcomes that are derived from dubious interviews. Notwithstanding this aforementioned body of knowledge, it remains important to replicate observational studies of child interviewing practices to determine if there is a convergence of evidence across researchers and jurisdictions, and to obtain the data to necessitate decisions about interviewing policy and the extent to which interviewing practices need improvement. The goal of this research is to conduct a systematic assessment of the child interviewing practices in one Canadian police organization.

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Evidence-Based Child Interviewing Practices: A Brief Overview

The empirical literature on child development identifies the interviewing practices that help children maximize the quality and quantity of the information they provide. In this section, we provide a brief outline of those practices and explain why it is important that interviewers utilize them routinely. A comprehensive review of these practices, and the extensive

psychological literature that supports the use of them, can be found in Lamb, Hershkowitz, Orbach, and Esplin (2008).

Prior to the substantive phase of the interview, interviewers are encouraged to implement a number of actions to maximize the effectiveness of an interview. For instance, interviewers are taught to help enhance memory retrieval capabilities by reducing distractions during the interview (e.g., having only one person in the interview room). Research also suggests that interviewers should ensure that the rules of communication are clear to the child so that confusion, inaccurate information, and susceptibility to suggestions are minimized. Specifically, enhancing the child's competence as a witness is accomplished by making sure the child promises to tell the truth; understands the questions before answering; feels comfortable saying "I don't know" or "I don't remember" and correcting any mistakes made by the interviewer; and only reports personally experienced events (see Bruck & Melnyk, 2004; Ceci & Bruck, 1993; Hughes & Grieve, 1980; Orbach et al., 2000; Talwar, Lee, Bala, & Lindsay, 2002).

Building rapport with the child witness or alleged victim prior to asking questions about an incident is also important because it can help instill trust in the interviewer, minimize stress (which may impede memory retrieval and disclosures), train the child to provide narrative responses, and provide the interviewer with an opportunity to assess the child's narrative style (see Hershkowitz, Orbach, Lamb, Sternberg, & Horowitz, 2006; Lyon & Saywitz, 2006). Research has shown that asking a child to provide a narrative account of an unrelated neutral event (and teach them to elaborate on that narrative) is another vital practice because it makes the child aware of how to respond properly during the questioning of the incident. This training also allows the interviewer to measure the child's ability to give details about an episodic memory (as opposed to skeletal or script-based answers; Lamb et al., 2008).

The best available evidence also suggests that interviewers should rely primarily upon free recall prompts (i.e., open-ended invitations and cued invitations) to gather information because they elicit the most information and the best quality of information (Lamb, Sternberg, & Esplin, 1998; Orbach & Lamb, 2001). Even more precisely, research has shown that using action-based cues when inviting responses tends to elicit more details than the other types of cues (e.g., event-based cues, time-segmenting cues; Lamb et al., 2003). Given that the details surrounding an account may be incomplete after the child appears to have reported all that s/he can in response to free recall prompts, interviewers are encouraged to use directive questions (i.e., who, what, when, where, and how questions) to increase the completeness of an account. For comparison purposes, an ideal proportion of invitations to directive questions should be around 80-20 (see www.nichdprotocol.com). By following a funnel approach when questioning children (i.e., following up broad invitations with more focused questions), the quality and quantity of the child's account can be maximized.

The research is also very clear on the types of questions that should be avoided during interviews with children. For instance, option-posing questions (i.e., closed yes/no and forced-choice questions) should not be used because they encourage guessing, thus, producing less reliable and less complete information (Larsson & Lamb, 2009). The use of option-posing questions runs the risk of the child providing only "yes" or "no" answers, or picking one of the options – neither of which may be correct – offered by the interviewer (Fritzeley & Lee, 2003). In instances where the child does not know the answer, option-posing questions also puts pressure on the child to supply an answer (Saywitz, Snyder, & Nathanson, 1999). Responses from option-posing questions also tend to be shorter than responses to invitations (Larsson & Lamb, 2009). Further, it is well known that leading questions are problematic because they can taint the information provided by the child, and asking multiple questions at once may lead a child to ignore some or all of the questions because such questions are confusing (Perry et al., 1995).

There is also much consistency in the empirical literature about other interviewing practices that should not be observed in interviews with children. For instance, asking children to "imagine" or "pretend" is deemed inappropriate because it may lead to the reporting of false or fantasy-based details (Pipe, Orbach, Lamb, Abbott, & Stewart, 2013). In a similar vein, research makes clear that contingent reinforcement (i.e., reinforcement that is based on what the child says) is worrisome because it can also lead to false details and allegations (Bruck & Melnyk, 2004). In a study by Garven, Wood, and Malpass (2000), the authors found that young children (5-7 years old) exposed to contingent reinforcement made significantly more false allegations (52%) compared to children who were not exposed to such reinforcement (5%).

Although the type of information that a child provides is largely beyond the control of the interviewer (i.e., depends on what the child noticed), interviewers are encouraged to procure as many central details as possible (i.e., details surrounding what happened and necessary for the resolution of an investigation). A number of studies have shown that the memory of central details tends to be more accurate and less susceptible to suggestion than memory of peripheral details (e.g., Cassel & Bjorklund, 1995; Coxon & Valentine, 1997). The importance of obtaining central details is further supported the finding that obtaining these details led to an increase in the number of charges filed by the prosecution and guilty verdicts (see Pipe et al., 2013).

The Current Study

To date, there are only a small number of studies that provide insights into child interviewing practices in Canada. In a study by Dion and Cyr (2008), the ability of untrained and NICHD

protocol trained interviewers to extract information from children with low and average verbal abilities was examined. Their analysis of the 17 interviews (five low verbal ability and 12 average verbal ability children) by 12 interviewers (i.e., a mix of police officers and social workers) offer insights into the distribution of question types across interviews by both untrained and NICHD protocol trained investigators. Their results showed that untrained interviewers used fewer invitations on average than trained interviewers (6% and 19%, respectively). Untrained interviewers also asked more suggestive questions than trained interviewers (6% and 3%, respectively). In another Canadian study, Cyr and Lamb (2009) analyzed 83 transcripts of untrained and NICHD protocol trained interviewers from Québec (conducted by eight police officers and nine social workers). In relation to untrained interviewers, their results showed that 12% of all questions were invitations, 42% were directive, 36% were option-posing, and 10% were suggestive. By contrast, 48% of all questions asked by trained interviewers were invitations, and 26% were directive, 19% were option-posing, and 7% were suggestive. Cyr and Lamb also found that, despite the fact that invitations resulted in the highest question-to-response length ratio, most of the information was extracted through the use of directive and option-posing questions. Similar findings have also been reported in other Canadian studies (Price & Roberts, 2011; Rischke, Roberts, & Price, 2011). Taken together, the results from the Canadian studies show that untrained interviewers tend to rely upon inappropriate question types, but that it is possible to train interviews to improve their questioning skills dramatically. Such findings are consistent with the findings reported in other countries as well (e.g., Cederborg, Orbach, Sternberg, & Lamb, 2000; Lamb et al., 2009).

The primary focus of the aforementioned studies was to examine the impact of the NICHD protocol training on questioning skills. Beyond those studies, there has not been a systematic assessment of the child interviewing practices used by Canadian police officers in the field. Thus, the goal of this study is to provide a statistical summary of a range of child interviewing practices from one Canadian police organization. Such a summary can contribute to the corpus of evidence required by decision makers when considering interviewing policy and practices (e.g., the allocation of funding for training programs, minimizing risks for miscarriages of justice faced by police organizations; see Lamer, 2006).

Method

Sample

A non-probability sample (i.e., convenience; $N = 45$) of police interviews with children conducted between 2006 and 2012

was obtained from an Atlantic Canadian police organization. The mean age of the children was 11.16 years ($SD = 3.23$, range: 3–16). Approximately 73% of the children were alleged victims and the remaining children were witnesses. Girls comprised 72.72% of the alleged victims and 61.54% of the witnesses. The interviews pertained to sexual assault (64.44%), assault (24.44%), exhibitionism (4.44%), internet luring (4.44%), and voyeurism (2.22%). Overall, the average length of an entire interview was 45.20 min ($SD = 23.72$, range: 5–102, $n = 44$) and 35.68 min ($SD = 20.82$, range: 4–92) for the substantive phase (i.e., questioning about the alleged incident). A disclosure was made in 93.94% of the alleged victim interviews.

One interviewer was present in 40.00% of the interviews, and two were present in the remaining interviews. Fifteen different primary police officers (and 11 different social workers) comprised the sample of individuals conducting the interviews. The most interviews carried out by any one interviewer were 26.67%. Social workers always held the position of secondary interviewer and rarely contributed to the interview process. No demographic information on the social workers was available. Approximately 53% of the primary interviewers were men. All primary interviewers held the rank of constable. The mean age of the primary interviewers was 38.13 years ($SD = 4.86$, range: 27–47) and the average years of policing experience was 9.29 ($SD = 6.55$, range: 2–24). Approximately 62% of the interviews were conducted by an interviewer who had received a two-week course on the best practices associated with interviewing adults (i.e., the PEACE model of investigative interviewing).

Materials

Thirty-five of the interviews were transcribed by clerical staff at the participating police organization and provided on a compact disc, along with audio recordings of the interviews (audio was unavailable for one transcript). The remaining 10 interviews were transcribed from audio and/or video recordings by the first author and checked for accuracy and completeness. A coding manual, based on a reading of the literature on the NICHD protocol, was created to capture interview practices (see Table 1; Lamb et al., 2008; Orbach et al., 2000; Sternberg et al., 2001). The NICHD protocol was chosen as the basis for the coding manual as this protocol is the most comprehensive and field tested method for interviewing children and it has been validated empirically (see Lamb, Orbach, Hershkowitz, Esplin, & Horowitz, 2007 for a complete review).¹ In addition, the total number of words spoken by the interviewer(s) and child, along with the number of interruptions, was tabulated.

¹ For more information on the NICHD protocol, please visit the NICHD website: <http://nichdprotocol.com/>

Table 1 Coding Manual and Examples of the Coded Variables

Section	Variable Name	Variable Definition	Variable Examples
Introductory Practices	Explained Purpose of Interview	Interviewer explained to child what they will be doing during the interview	<i>“We are here today to talk about [incident/the fact that something may have happened to you].”</i>
	Truth-Lie Distinction	Interviewer tested the child’s ability to distinguish between a truth and lie	<i>“If I say that my shoes are black, is that true or not true?”</i>
	Promise to Tell Truth	Interviewer asked the child to promise to tell the truth.	<i>“I want you to promise to tell me the truth here today.”</i>
	“Don’t Know” Instruction	Interviewer explained that it is acceptable for child to say that they don’t know something	<i>“If I ask a question, and you don’t know the answer, just tell me ‘I don’t know’”</i>
	“Don’t Understand” Instruction	Interviewer explained that it is acceptable for child to say they don’t understand something	<i>“If I ask you a question that you don’t understand, just say ‘I don’t understand’, okay?”</i>
	Correct the Interviewer Instruction	Interviewer explained to child that it is acceptable to correct interviewer if s/he made a mistake	<i>“If I say things that are wrong, you should tell me, okay?”</i>
	Build Rapport	Interviewer discussed activities that the child likes to participate in	<i>“I’d like to get to know you better. Tell me about the things you like to do. Tell me more about [activity mentioned by child]”</i>
	Narrative Training	Interviewer asked an open-ended to child about a salient event (recent or around time of incident)	<i>“A few [days/weeks/etc] ago was [holiday/birthday/etc]. Tell me everything that happened on [holiday/birthday/etc]”</i>
	Reason for Interview	Interviewer established that child understand why s/he is being interviewed	<i>“I understand that something may have happened to you. Tell me everything that happened.”</i>
Discouraged Practices	Room Contained Distractions	Variable was scored if interview room contained distractions that diverted the interviewee’s attention	Colouring book, toys, books, stuffed animals
	Contingent Positive Reinforcement	Variable was scored if interviewer included positive reinforcement to a child’s response	<i>“That was good information. You’re doing a good job now.”</i>
	Contingent Negative Reinforcement	Variable was scored if the interviewer included negative reinforcement to the child’s response	<i>“You’re not doing a good job at remembering.”</i>
	Imagine/Pretend Instruction	Variable was scored if the interviewer told the child to “imagine” or “pretend” at any point throughout the interview	<i>“I want you to pretend for a moment”</i>
Question /Prompt Types	Invitations (Open-Ended)	Questions that elicit free-recall responses from the child	<i>“Tell me what happened”</i>
	Directive Questions	Who, what, when where, and how questions	<i>“What colour was the shirt?”</i>
	Option-Posing (Closed Yes/No)	Questions that are typically answered with a “Yes” or “No” response	<i>“Did he have his clothes on?”</i>
	Option-Posing (Forced-Choice)	Questions that offer the child a limited number of possible responses	<i>“Were you inside or outside when it happened?”</i>
	Suggestive Questions	Questions stated in such a way that the interviewer communicates what response is expected	<i>“He touched your bum, right?”</i>
	Clarification Questions	Questions that repeat what a child has said (in the form of a question)	Child: <i>“My friend was there with me.”</i> Interviewer: <i>“Oh, so your friend was there with you, was he?”</i>
	Multiple Questions	Multiple questions that are asked without pausing and/or giving the child a chance to responds	<i>“Where were you? When did it happen? How did it happen?”</i>
	Summary	Interviewer restates accurately what the child has just said in the form of a statement, without any explicit request for information or response	<i>“Okay, you walked to the mall and met up with some friends.”</i>
Detail Types ^a	Central Details	Any <i>unique</i> information provided by the child that was integral and crucial to understand the alleged criminal activity	Child: <i>“He touched my bum.”</i>
	Peripheral Details	Any <i>unique</i> information provided by the child that was not integral or crucial to understanding the criminal event	Child: <i>“Yesterday I ate ice cream.”</i>
Detail Subtypes	Person (Central/Peripheral)	Coded whenever the child mentioned a person	Mother, Grandfather, etc.

Table 1 (continued)

Section	Variable Name	Variable Definition	Variable Examples
Response Types	Location (Central/Peripheral)	Coded whenever the child mentioned a location	Bedroom, Kitchen, etc.
	Action (Central/Peripheral)	Coded whenever the child mentioned an action	Touching, Hitting, etc.
	Time (Central/Peripheral)	Coded whenever the child mentioned time	Day, Month, etc.
	Responsive Utterance	Variable was scored if the child's utterance related to specific topics (aspects or details of the allegation) suggested by the interviewer in the preceding utterance	Interviewer: "Tell me where he touched you." Child: "He touched my bum."
	Unresponsive Utterance	Variable was scored if the child's utterance was not related to the interviewer's previous utterance, but was related to the general topic of the investigation	Interviewer: "Tell me where he touched you." Child: "He touches me everyday."
	Digression	Variable was scored if the child's utterance was not related to the general topic of the investigation	Interviewer: "Tell me where he hit you." Child: "I have a new puppy."
	Unclear Utterance	Variable was scored if the child's utterance was incomprehensible	Child mumbles answer and cannot hear what s/he has said
	No Answer Provided	Variable was scored if the child did not provide an answer when the interviewer asked a question	
	"Yes" Response	Variable was scored if the child answered "yes", or some variation	Interviewer: "Did he hit you?" Child: "Yup."
	"No" Response	Variable was scored if the child answered "no", or some variation	Interviewer: "Did he touch you?" Child: "No way!"
	"Don't Know" Response	Variable was scored if the child answered "I don't know", or some variation	Interviewer: "How many times did it happen?" Child: "I dunno"
	Incomplete Utterance	Variable was scored if the child did not answer full a question, or was interrupted by the interviewer	Interviewer: "Did it happen a lot?" Child: "Well, I think it –" Interviewer: "Were you there alone?" Child: "What did you say?"
	Request for Clarification	Variable was scored when the child asked the interviewer what they meant/repeat question.	
Spontaneous Utterances	Variable was scored when the child provided details without a prompt.	Interviewer: "How many times did she hit you?" Child: "Twice." Interviewer: "Okay." Child: "My grandfather touched my bum."	

Note: a = Any information that was repeated was included in the total word count but was only counted once for central and peripheral details

Procedure

The first author read each interview transcript once and coded the components of the introductory phase, discouraged practices, and question and response types. The total number of words spoken by the interviewer(s) and child was then calculated using the word count function in Microsoft Word. The transcripts were read a second time to determine the number of unique central and peripheral details. The first author then listened to each interview to tabulate the number of interruptions and to record the lengths of the entire interview and the substantive phase.

Reliability Analysis

Inter-rater reliability analysis was carried out by having the third author code 10 (22.22%) randomly selected

interviews. The third author is a veteran interviewer, who is trained in all levels of the PEACE Model of Investigative Interviewing (used with adults), and the NICHD protocol. The third author was provided with a training session that covered the practical aspects of the coding guide and the content dictionary. The reliability of coding was measured using Cohen's Kappa (Cohen, 1960) and percentage agreement (in brackets). The mean agreement for all practices was $\kappa = .85$ (92.67%). Agreement for the components of the introductory phase was $\kappa = .93$ (95.00%), $\kappa = .80$ (83.33%) for the five inappropriate interview practices, $\kappa = .71$ (77.99%) for question types, $\kappa = .83$ (90.94%) for response types, $\kappa = .67$ (84.83%) for whether the details were central or peripheral, and $\kappa = .95$ (96.99%) for the specific types of detail. These values suggest an excellent level of agreement between the coders (Landis & Koch, 1977).

Results

We first examined how often nine practices occurred in the introductory phase occurred.² The interviewer established that the child understood the reason for the interview (i.e., the event under investigation) in 84.44% of the interviews. The general purpose of the interview was explained to the child 75.56% of the time. The interviewer checked to see if the child knew the difference between a truth and an untruth in 17.78% of interviews, and no interviewer asked the child explicitly to promise to tell the truth. The interviewer explained that it is acceptable for the child to say “I don’t know” in 28.89% of interviews, say “I don’t understand” in 17.78% of interviews, and correct the interviewer in 20.00% of interviews. The interviewer attempted to build rapport in 31.11% of the interviews, and conducted narrative training in 11.11% of the interviews.

In terms of inappropriate practices, we observed the interviewer engaging in contingent positive reinforcement in 15.56% of the interviews. On average, in those interviews, contingent positive reinforcement was observed 1.84 times ($SD = 0.37$, range: 1–5). None of the interviewers engaged in contingent negative reinforcement. In one of the interviews, an interviewer used a teddy bear as a representational aid. In another interview, the child was told to “pretend” as an instruction when giving her account.³

The average number of questions per interview was 109.24 (95% $CI = 93.74, 124.74$). The total number of questions/prompts across the 45 interviews was 4,995. The percentage of the eight types of questions/prompts asked is shown in Table 2. As can be seen, the majority of the question types were directive and closed yes/no. Very few invitations were observed. Relatively few suggestive and forced-choice questions were observed. Table 2 also contains the mean response length as a function of question types. As can be seen, invitations produced the longest responses and all other question types produced between 10%–30% of the amount of information produced in response to invitations. The mean numbers of words provided spontaneously was 54.49 words. On average, the child did not respond to a question 0.17% (95% $CI = 0.00, 0.38$) of the time.

We also examined how the children responded to the option-posing and suggestive questions. In response to closed yes/no questions, children responded with a simple “yes” response 22.52% of the time, and a simple “no” response 20.84% of the time (the remaining percentage pertained to a

variety of responses such as “don’t know”). Of the 143 forced-choice questions asked, 93.01% had two alternatives, 5.59% had three alternatives, and 1.40% had four alternatives. Across the two alternative forced-choice questions, the first option was chosen in 39.85% of cases and the second option was chosen in 29.32% of cases (the remaining percentage pertained to a variety of responses such as “don’t know”). Across the three alternative forced-choice questions, the first, second, and third options were each was chosen 12.50% of the time. Across the four alternative forced-choice questions, the children did not pick one of the answers provided. Overall, an option provided by the interviewer was chosen 66.43% of the time. On average, when asked a suggestive question, children acquiesced 50.49% of the time.

Across all 45 interviews, a total of 5,785 (59.57%) of details were classified as peripheral and 3,926 (40.43%) details were classified as central to the investigation. Of the peripheral details provided by the child, 62.80% were related to actions, 13.21% were related to people, 12.38% were related to times, and 11.62% were related to locations. In regards to the central details provided by the child, 77.79% were related to actions, 9.27% were related to people, 6.62% were related to locations, and 6.32% were related to times. The percentage of central and peripheral details as a function of question type is also shown in Table 2. The majority of the central details were obtained in response to invitations and directive questions (i.e., almost 70%). By contrast, the majority peripheral details were obtained by directive and closed yes/no questions.

The percentage of response types is shown in Table 3. The majority of responses provided by the children were responsive. Broadly, the children responded appropriately to approximately 90% of the interviewer’s questions. On average, 53.85% (95% $CI = 49.91, 57.79$) of all of the words spoken in an interview were attributed to the child, and the child spoke less than the interviewer(s) in 19 (42.22%) of the 45 interviews. The average number of interruptions per interview was 3.27 (95% $CI = 2.44, 4.10$).

Discussion

We sought to provide a statistical summary of the child interviewing practices in one Canadian police organization. The broad finding was that the interviewers did not use evidence-based practices frequently. Such a finding was anticipated because, at the time of the study, the interviewers were not trained to use scientifically-driven child interviewing practices. At the same time, the infrequent use of evidence-based practices was somewhat unanticipated because of the wealth of readily available research on child development and interviewing practices. Nonetheless, our results reaffirm the

² Due to the small sample size for each age group, no age-related analyses were conducted.

³ Note that the data surrounding the distractions could only be determined for the nine interviews that were video-recorded ($N=9$). Based on these data, four (44.44%) showed evidence of multiple forms of external distractions. The distractions included coloring books (75.00%), toys (50.00%), story-books (25.00%), and a child’s cell phone (25.00%).

Table 2 The Percentage of Question Types/Prompt Asked, Along With Mean Response Length, Percentage of Central Details, and Peripheral Details as a Function of Question Type/Prompt (and Associated 95% Confidence Intervals)

Question Type/Prompt	Descriptive Statistics			
	Percentage	Mean Response Length (Words)	Percentage of Central Details	Percentage of Peripheral Details
Invitation	7.38 [4.35, 10.42]	74.61 [59.94, 89.28]	39.99 [38.47, 41.53]	16.64 [15.70, 17.62]
Directive	31.61 [29.26, 33.96]	25.47 [21.07, 29.87]	29.27 [27.87, 30.71]	40.98 [39.72, 42.26]
Closed Yes/No	36.31 [33.15, 39.47]	14.54 [12.94, 16.14]	16.84 [15.70, 18.04]	24.29 [23.20, 25.42]
Forced-Choice	2.91 [2.31, 3.50]	13.79 [9.18, 18.40]	2.24 [1.82, 2.75]	1.62 [1.32, 1.98]
Suggestive	4.19 [3.04, 5.34]	10.00 [6.04, 13.96]	0.94 [0.68, 1.29]	1.77 [1.46, 2.14]
Clarified	7.22 [5.35, 9.09]	8.97 [7.06, 10.88]	1.66 [1.31, 2.11]	2.96 [2.55, 3.43]
Multiple	4.15 [2.97, 5.33]	20.58 [16.36, 24.80]	4.43 [3.83, 5.12]	4.49 [3.98, 5.06]
Summary	6.22 [4.29, 8.16]	18.48 [14.90, 22.06]	2.95 [2.46, 3.53]	3.72 [3.26, 4.27]
Spontaneous Utterance	–	54.49 [44.17, 64.81]	1.68 [1.32, 2.13]	3.55 [3.10, 4.06]

need for evidence-based protocols, such as the NICHD protocol, to be implemented and followed.

Although pre-interview ground-rules, rapport building, and narrative training are important for laying the foundation for an effective interview, we found little evidence that those practices were being used. As mentioned, it is not entirely surprising that most of the ground-rules and that the narrative training were nonexistent because the interviewers were untrained in child interviewing practices. The lack of rapport building was particularly surprising, however, because it is a practice that is recommended in all types of interviews, and the majority of interviewers had participated in a two-week adult interviewing training program that emphasized the importance of building rapport. Although we observed few attempts at rapport building, it is possible that the interviewers built rapport with the children prior to start of the audio and/or video-recording.

Consistent with past research on child interviewing practices in Canada and abroad, we found that untrained interviewers used invitations rarely – around 7% of the time (cf. Cederborg et al., 2000; Cyr & Lamb, 2009; Orbach & Lamb, 2001; Price & Roberts, 2011; Rischke et al., 2011). Even when we consider the upper bound of the confidence interval, the percentage of invitations used by child interviewers in the participating organization would not likely exceed 10% of all questions asked. By comparison, studies examining those trained in the NICHD protocol revealed that between approximately 30% and 50% of all prompts/questions used are invitations (e.g., Cyr & Lamb, 2009; Lamb et al., 2009). Beyond the obvious lack of child interview training, it may be the case that invitations were not used frequently – the way that other common questions types are observed (e.g., directive) – because questions starting with ‘Tell’, ‘Explain’, or ‘Describe’ may be absent in most interviewers’ vernacular. It would be interesting to obtain a baseline of the frequency of open-ended questions used in everyday communication in

order to test this potential explanation. Another explanation for the failure to use invitations may be due to preconceived expectations that children are unable to respond properly to invitations. Regardless of the actual explanation for the infrequent use of invitations, this finding raises a concern about the quality of the information being used to investigate allegations of wrongdoing. The concern about the quality of statements is exacerbated by the fact that invitations elicited the largest amount of information and the largest amount of central details.

Adding to the concerns about the infrequent use of invitations is our finding that the majority of question types used were largely inappropriate. Specifically, closed yes/no and directive questions constituted over half of all questions asked. Although directive questions have their place in the funnel questioning approach, the overreliance on those sorts of question types minimize the amount and quality of information elicited from the child. We found that directive questions elicited a third of the information provided by invitations and closed yes/no questions elicited a quarter of the information provided by invitations. These results make clear that

Table 3 Percentage of Response Types (and Associated 95% Confidence Intervals)

Response Type	Percentage	95% Confidence Interval
Responsive Utterance	65.22%	61.80, 68.64
“Yes” Responses	17.31%	14.96, 19.66
“No” Responses	8.52%	7.02, 10.02
“Don’t Know” Responses	2.80%	1.86, 3.74
Unresponsive Utterances	1.67%	1.19, 2.15
Digressions	1.73%	0.00, 2.72
Request for Clarification	1.08%	0.74, 1.42
Incomplete Utterances	0.82%	0.41, 1.23
Unclear Utterances	0.69%	0.16, 1.22

interviewers who are relying primarily upon directive and closed yes/no questions are working harder (by asking many more questions) to elicit less information than interviewers who rely on invitations. By using mostly directive and closed yes/no questions, interviewers are potentially narrowing the scope of their investigations by limiting the information they elicit from the child and by collecting information that is of questionable quality.

A positive finding from the current study is that interviewers used suggestive, multiple, and forced-choice questions infrequently. However, it is worth reiterating that such questions should never be used in an interview. The use of these question types poses a number of problems. For instance, suggestive utterances may reduce the reliability of the child's responses because s/he may provide the answer that is implied by the interviewer. It is possible that suggestive questions may contain correct pieces of information. However, the problem is that interviewers are often unaware of the ground truth. Our findings showed that children acquiesced to suggestive utterances 50% of the time. Multiple questions make it difficult for the child to discern which question to answer. In addition, as our results showed, forced-choice questions often cause the child to choose one of the available options (whether or not either of the options is correct). In general, the use of inappropriate question types can lead to memory contamination and false information being brought into an investigation.

In contrast with interviews conducted with adult witnesses, we found that the interviewers spoke more than the child in almost half of the interviews. Research examining interviews with adult witnesses and alleged victims by Canadian police officers showed that the interviewers spoke more than the interviewee in only 16% of the interviews (Snook & Keating, 2010). The child interviewers talking time is closer to the talking time of suspect interviewers (Snook, Luther, Quinlan, & Milne, 2012). In line with explanations for the infrequent use of invitations, it may be the case that the over-talking is due to a bias whereby interviewers think that children, like suspects, required a more controlling interview strategy than adult witnesses. However, the more plausible explanation is that the over-talking is an artefact of the question-response pairing, whereby the length of the closed yes/no and directive questions are naturally longer than the answers provided to such questions.

Overall, our results suggest that a nation-wide evidence-based policy on child interviewing training is required to ensure that the Canadian legal system is poised to capture children's strengths as eyewitnesses. Across a range of studies around the world, improvements in child interviewing practices have been achieved through the implementation of the NICHD protocol. Studies have shown that following the NICHD protocol can increase dramatically the use of invitations (Cederborg et al., 2000; Cyr & Lamb, 2009; Lamb et al.,

2002; Lamb, et al. 2009; Orbach et al., 2000; Price & Roberts, 2011; Rischke et al., 2011). Studies have also shown that following the NICHD protocol leads to a reduction in the use of inappropriate questions, and other undesirable behaviours (Cyr & Lamb, 2009). Although some may argue that it is premature to make such recommendations because we examined only one police jurisdiction, it must not be forgotten that our findings converge with data from one other jurisdiction in Canada and many abroad (e.g., Norway, Sweden). This convergence of evidence suggests that other police organizations in Canada and the United States (if they have not received appropriate training and feedback) are similar to the ones studied herein, and thus, may need to reform their child interviewing practices.

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