



## “And they gave me a shot, it really hurt” – Evaluative content in investigative interviews with young children<sup>☆, ☆☆</sup>



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### ABSTRACT

Research is scarce on the suitability of the evidence-based components of child investigative interviews when used in non-forensic contexts, such as social work or school, particularly in relation to children's reports on emotional content.

This explorative study investigated to what extent a structured forensic interview protocol aids children in verbalizing negative emotional experiences of distress or discomfort. To do this we assessed and compared children's displayed distress during a video-recorded health visit with the verbalized distress in interviews 2–4 weeks later about this visit. The children, aged 4 and 5 years (N = 26), were interviewed with a forensic interview protocol. The recorded visits were coded for level of distress and children's statements regarding distress along with the interviewer questions preceding them were analyzed qualitatively.

The results showed that 46% of the 4-year-olds and 39% of the 5-year-olds displayed discomfort or distress during their health visit. In the interviews, open-ended questions were posed to all children. These questions were sufficient to aid only some children (n = 6) to share evaluative content. However, none of the children who displayed distress or discomfort during the visit verbalized such experiences after an invitation only. Most children who described negative experiences did so in response to evaluative questions.

The results suggest that more research is warranted on how and when evaluative questions should be posed and whether this differs depending on severity of experience or the child's age. The need for protocol development and its suitability when used in other fields of practice is discussed.

### 1. Introduction

Over the past decades, research on methods to elicit reliable reports from children has increased dramatically and there is now a general agreement on a set of core evidence-based principles for interviewing children (Faller, 2015; Lamb, Orbach, Hershkowitz, Esplin, & Horowitz, 2007; Lyon, 2014). These principles have mainly been derived from experimental research within the forensic field focusing on cognitive factors related to memory and suggestibility (Sales, Fivush, Parker, & Bahrack, 2005). However, less attention has been paid to children's emotional reactions and the best ways to help children describe these reactions (Ahern & Lyon, 2013; Lyon, Scurich, Choi,

Handmaker, & Blank, 2012). The purpose of the present study was to examine the extent to which a structured forensic interview protocol aids young children in verbalizing their emotional experiences.

#### 1.1. Investigative interviews

A number of forensic interview protocols focus on children's reports and incorporate evidence-based components. One of the most well-researched formats is the National Institute of Child Health and Human Development (NICHD) Protocol. It is a highly structured investigative protocol developed to gain accurate, informative and complete accounts from child witnesses (Brown et al., 2013; Lamb et al., 2007). It

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contains clear and specific guidelines addressing all phases of the investigative interview. One of the main features of the protocol is its instructions on the types of questions to ask children and the timing of each question type. The recommended recall strategy to use is open-ended questions such as “Tell me all about...”. These questions have been demonstrated to be superior in tapping children's free recall (Hershkowitz, Lamb, Orbach, Katz, & Horowitz, 2012; Sternberg, Lamb, Orbach, Esplin, & Mitchell, 2001). When no more information is obtained through open-ended questions, directive questions referring to previously mentioned information by the child can be used. For example, “What color was the nurse's hair?” (if the nurse has been mentioned before). Recognition prompts such as option posing questions and suggestive questions, are to be avoided. These guidelines are not unique to the NICHD Protocol, and are standard in several child forensic interview protocols (Faller, 2015). One of these protocols is the National Children's Advocacy Centre (NCAC) Child Forensic Interview Structure (National Children's Advocacy Center, 2015). This interview structure is used in countries all over the world and is continuously updated to keep up with research-based recommendations (The National Children's Advocacy Center, 2012). However, the rather strict guidelines in forensic interview protocols have also received critique for not being sufficient in relation to younger children (Gross & Hayne, 1998; Saywitz & Snyder, 1996). Even though adhering to the guidelines will increase the accuracy of children's statements, for example by posing mainly open-ended questions, the reports of young children are still often brief in comparison with reports of older children (Baker-Ward, Gordon, Ornstein, Larus, & Clubb, 1993; Nelson & Fivush, 2004).

### 1.2. Young children's ability to verbalize emotions

Children are capable of talking about their experiences using emotion terms such as happy, and sad from an early age (Fivush & Baker-Ward, 2005). This ability to use what is called an internal state language, starts to develop around two years of age (Wang, 2008). During the preschool years, children's emotion language becomes more complex, and they are increasingly aware of emotions as internal and subjective experiences (Wellman, Harris, Banerjee, & Sinclair, 1995). Children's inclusion of emotions in their narratives gives us insights into how children make meaning out of and process experiences, particularly stressful ones (Fivush, McDermott Sales, & Bohanek, 2008). Children's accounts of negative events can also contribute to a better understanding of their psychological functioning and wellbeing (Sales et al., 2005). However, young children tend to include few emotion words spontaneously in their narratives, and their emotional reporting is often brief and infrequent (Butler, Gross, & Hayne, 1995; Fivush et al., 2008). This is problematic as the emotional components can provide vital information when children are interviewed about past and present events and experiences. In a forensic context, accounts of subjective mental states, such as the emotions experienced at the time of the event, can be of importance in judging the credibility of children's statements (Vrij, 2005).

### 1.3. Socioemotional factors in investigative interview protocols

Most investigative interview protocols put emphasis on cognitive factors related to children's memory retrieval (Faller, 2015; Hershkowitz, Lamb, Katz, & Malloy, 2015). However, in recent years, there has been a growing interest in the socioemotional factors that may affect the interview (Hershkowitz, 2009). The NICHD Protocol, for example, has been revised to also encompass socioemotional aspects that may increase children's cooperativeness (Hershkowitz, Lamb, & Katz, 2014). In the revised protocol the interviewer is provided with additional strategies on how to build and maintain rapport with the child. Some of the recommended approaches are to use the child's name, express interest in their experiences, reinforce them positively for their efforts to share information, and to echo and explore emotions spontaneously mentioned

by the children (Ahern, Hershkowitz, Lamb, Blasbalg, & Winstanley, 2014; Hershkowitz et al., 2015). The increased focus on rapport and interviewer support has been shown to increase children's cooperation (Ahern et al., 2014) and valid allegations (Hershkowitz et al., 2014). To our knowledge, no studies have examined the effect of the revised protocol on children's use of emotional language. Nevertheless, Ahern et al. (2014) discuss the need for future work that explores interviewer inquiries into children's emotional states.

### 1.4. Evaluative content in investigative interviews

Within the forensic field there is a lack of research on how the interviewer can relate to children's emotional experiences. Studies have shown that children seldom mention their reactions to abuse spontaneously in interviews (Katz & Barnett, 2014; Lyon et al., 2012). This was also explored by Westcott and Kynan (2004), who analyzed transcripts of investigative interviews with children aged 4–12 years. They concluded that only 20% of children spontaneously spoke about their emotional reaction to the abuse and 10% mentioned their physical reaction. For children under 7, the numbers were even lower with 5% expressing their emotional reaction and none of them their physical reaction. To better understand when children produced evaluative content, Lyon et al. (2012) instructed interviewers to add “how did you feel?” as a follow-up question. They showed that ‘How’-questions containing evaluative content, such as “how did you feel?”, were the most successful in eliciting evaluative answers. Several researchers argue for the importance of helping children share their reactions to abuse as the evaluative content is a vital part of a coherent narrative (Lyon et al., 2012; Snow, Powell, & Murfett, 2009; Westcott & Kynan, 2006). This, in turn, is a significant criterion when the credibility of statements is judged. Thus, the extent to which witnesses include descriptions of their reactions to an event can affect their credibility (Lyon et al., 2012). However, most forensic protocols do not include any specific guidelines on how to ask children questions about their emotional, physical or cognitive reactions to their experiences.

### 1.5. The dissemination of core investigative interview components

Although the components derived from the research on forensic interview techniques are mainly used in investigative interviews, they have begun to emerge in other contexts worldwide (Poole & Dickinson, 2013). For example, it has been discussed that they should be implemented in semi-structured interviews in various fields, such as with children in foster care (National Board of Health and Welfare, 2015), in the social services more generally (Cederborg, 2005) or in school settings (Brubacher, Powell, Snow, Skouteris, & Manger, 2016). This is not surprising, as other research arenas for child interviews have not seen a systematic methodological development equivalent to the forensic field. However, simply adopting forensic interview techniques in other areas is not without challenges. There is a scarcity of research on the suitability of forensic interview components when used in other contexts, such as social work or child health care settings, where not only the reliability of children's statements, but also the scope of their emotional experiences is of importance.

### 1.6. The current study

The current explorative study made use of a situation with high ecological validity which at the same time offered the advantages of an experimental situation. The child's regular child health visit was videotaped and 2–4 weeks later the child was interviewed about this very situation. Thus, we were able to compare observed signs of distress or discomfort in a clinical setting with what was later verbalized in interviews with the children conducted according to a forensic protocol.

In Sweden, more than 99% of families with children up to age six utilize the child health services and families with children aged

2–5 years are offered annual health visits (Wallby, 2012). For children aged 4 and 5 years the visit includes an optometric exam and vaccination, respectively. These ages were chosen for the study as the procedures contain interaction and physical contact, which could evoke different reactions.

The aim of this study was to explore to what extent a structured forensic interview protocol aids children in verbalizing their emotional reactions, in particular the negative emotional experiences of distress or discomfort. Furthermore, the relationship between children's observable signs of distress or discomfort at the Child Health Center (CHC) visit and what they later verbalized in the interviews, was also of concern. The questions of interest were: To what extent do children display observable signs of distress or discomfort during their child health visit?; To what extent do children verbalize these experiences of distress or discomfort in the interviews?; What kind of questions precede children's verbalization of these emotional experiences?; What is the relationship between distress/discomfort at the visit, the verbalized distress/discomfort in interviews and the interviewer questions preceding these emotional statements?

The study is explorative with a combination of descriptive statistics and qualitative analysis techniques, inspired by, but not strictly following, conversation analysis.

## 2. Methods

### 2.1. Participants

Data for the present study were elicited from a larger study comparing the ability of two interview methods, i.e. the modified NCAC Child Forensic Interview Structure and the In My Shoes computer-assisted interview, to elicit accurate and complete accounts from preschool aged children (Fängström et al., 2016). In the larger study 80 children aged 4 and 5 years and their parents agreed to participate, which entailed having their routine visit at the Child Health Center (CHC) video-recorded as well as allowing the child to be interviewed about the visit. The children were randomized to being interviewed with either the IMS interview or a forensic interview protocol, which was a slightly modified version of the NCAC Child Forensic Interview Structure. The modified NCAC interview structure (described in more detail later) consists of a short introduction/rapport building which also includes narrative practice. In the subsequent substantive phase, open prompts are used until the child's memory is exhausted after which follow-up questions to elicit further details are used.

The children for whom we had complete data (the CHC-visit and the interview being recorded and the child having talked about the visit) and that were interviewed with the modified NCAC forensic interview structure, were selected for this study. The final sample thus included 26 children whereof 13 aged 4 years ( $M = 48.1$ , range 48–50 months) and 13 aged 5 years ( $M = 62.5$ , range 60–69 months). Of the 4-year-olds 61.5% were girls and of the 5-year-olds 46.2% were girls. Even though the recruitment took place at CHCs situated in areas with varying socio-demographic characteristics, only 15% of the children had at least one parent born outside Sweden (compared to 34% at a national level) and 12% of the parents had a level of education below college/university level (compared to 37% in the target population).

The study was approved by the Regional Ethical Review Board in Uppsala, Sweden, #2012/387.

### 2.2. Procedure

Families with children aged 4 and 5 years were recruited at five CHCs in two larger municipalities in Sweden. The recruitment lasted for 20 months during 2013 to 2015. Families were provided with both written and verbal information about the study by their Child Health nurse. Nurses were instructed to invite all families as there were no

exclusion criteria except child age. The nurse then video-recorded the health visit for those families giving their written consent (parents) and verbal assent (children) to participate. Two to four weeks later, the child was interviewed about the visit by one of two interviewers who had a Master of Science in either psychology or sociology. Both interviewers had extensive experience in interviewing, one as a registered psychologist and the other within research, and both were trained in the NCAC Child Forensic Interview Structure. The interviews were conducted at the child's preschool and video-recorded. At the beginning of the interview all children were asked for verbal assent and informed of their right to end the interview at any stage. The interviewers were unaware of how the visit had unfolded for each child prior to the interview, but knew about the general content of the routine visit at the specific ages.

#### 2.2.1. The CHC health check-up

During the health check-up for both 4- and 5-year-olds, the nurse assesses the child's general health, and the physical (for example, weight and height) and psychosocial development (for example by asking questions about the child's peer relationships). The 5-year-olds receive a vaccine injection in addition to these procedures. For 4-year-olds there is no injection but a standardized test for vision (HVOT optometric exam). During the HVOT exam the child's task is to look at letters of decreasing size at a distance of 3 m, using one eye at a time while the other is occluded by an ocular patch. The nurse points to the letters and the child identifies the letter indicated by the nurse by answering verbally or by pointing to a chart depicting the letters held by the child. The exam continues until the child fails or succeeds to recognize a set number of letters in a row.

#### 2.2.2. Forensic interview structure

The forensic interview structure used is a slightly modified version of the NCAC Child Forensic Interview Structure (The National Children's Advocacy Center, 2012). The three main phases from the NCAC structure were kept, i.e. the introduction/rapport, the substantive phase, and the closure. However, the part where the child is asked about his or her family was excluded. During the introduction, the interviewer introduced herself or himself, obtained the child's assent, and both informed and showed the child how she or he could end the interview. To build rapport, the child was asked about what she or he liked to play. The interviewer then described the interview ground rules after which a short narrative practice took place where the child was prompted to elaborate on previously shared information. The substantive phase began when the interviewer showed the child two pictures, one of the entrance to the CHC, and one of the CHC waiting room. The child was then invited to share information about the CHC visit. Open-ended questions such as "Tell me all about..." or focused open-ended question that cue the child to a specific topic such as "Tell me more about the nurse", were used to elicit children's free recall. Follow-up questions, for example, "What color was the nurse's hair?", were asked to elicit further details. The use of other types of questions such as yes/no questions, multiple-choice and leading questions was minimized. Evaluative questions are not included in the ordinary NCAC Child Forensic Interview Structure, nor were they specifically planned to be used in our modified version.

When the children could not provide more information, or signaled a wish to end the interview, the interviewer thanked them for their participation and offered a small gift (a sticker or a stick-on tattoo).

### 2.3. Data analysis

First, the video-recorded CHC visit was coded with regard to the child's observable discomfort during the HVOT vision test (4-year-olds) or distress during the vaccine injection (5-year-olds). The interviews were then analyzed looking for children's statements containing evaluative information about the procedures and the type of interviewer

questions preceding these statements about distress or discomfort. The final step was to compare the evaluative statements and type of interviewer questions for each child with the corresponding coded CHC visit.

### 2.3.1. Observed distress or discomfort at the CHC visit

The Observational Scale of Behavioral Distress (OSBD) is a commonly used instrument to measure child distress (Jay, Ozolins, Elliott, & Caldwell, 1983). The OSBD includes the following categories: Crying, Screaming, Physical restraint, Verbal resistance, Verbal fear, Verbal pain, Requests emotional support, Nervous behavior, Information seeking and Flailing. We added a category called observable pain, i.e. visually observable behavior indicating pain (for example grimacing). All categories were used to assess 5-year-olds' distress at the visit. For 4-year-olds, the health check-up does not include any painful procedures, and the assessment therefore reflected child discomfort.

The coding spanned from about one minute pre-injection until one minute post-injection for 5-year olds and from 1 min before the vision or hearing test started until 1 min after it was finished for 4-year-olds. Each category was scored as having occurred or not during this time period and the intensity was noted (which deviates from the OSBD in which behaviors are coded in 15-second intervals and each behavior is weighted according to the intensity of distress it reflects). The scores were then summarized into a total score which also encompassed a clinical judgment of overall intensity of distress/discomfort. The total score ranged from no distress/discomfort (1) to moderate distress/discomfort (3) to severe distress/discomfort (5). Using a 5-point Likert scale and summarizing scores into a total score is standard practice with several observational measures (Blount, Bunke, Cohen, & Forbes, 2001). In order to create two distinct groups of children based on the assessed distress/discomfort the scores were transformed to a dichotomized scale consisting of no distress/discomfort (1–2, i.e. no to minimal distress/discomfort) and distress/discomfort (3–5, i.e. moderate to severe distress/discomfort) as values.

Two raters conducted the coding. One rater was one of the interviewers and the other was a researcher with previous experience in coding child interviews. Fifty percent ( $n = 13$ ) of the visits were coded by both raters and the inter-rater reliability was assessed using Cohen's kappa (Cohen, 1960). The kappa obtained was 0.82, which indicates high agreement and is above the recommended reliability standard (Landis & Koch, 1977; Nunnally, 1978).

The mean values and standard deviations were calculated for the total distress/discomfort score overall and by age as well as for the dichotomized categories overall and by age. A Mann-Whitney  $U$  test was performed to analyze the difference in total distress/discomfort between the age groups. A chi-square test was used to analyze differences in proportions between the age groups.

### 2.3.2. Analyzing the interviews

The interviews were transcribed verbatim and any name was removed. In the first step the interviews were systematically read through with a focus on the children's evaluative statements, i.e. statements containing any references to emotional or physical reactions, in relation to the examination procedures. We noted the intensity of the expressed content and categorized the interviews into either containing statements of distress or discomfort (moderate to high) or not. We then counted the number of interviews containing evaluative information.

Second, the types of interviewer questions were analyzed, especially those questions that preceded the children's evaluative statements. The questions were coded into six categories: 1) Invitation, i.e. open-ended questions such as "Tell me all about when you were at the CHC"; 2) wh-questions to invite the child to provide details on the "who", "what", "where" and "when", for example, "Who was with you?"; 3) Yes/no question, such as "Did you manage to do it?"; and 4) Leading, for example, "You felt sad, didn't you?"; 5) Evaluative (emotional questions), for example "How did it feel?"; 6) Evaluative (cognitive questions), for example, "What did you think about being there?". The first four

categories of questions are commonly used when forensic interviews are analyzed. The evaluative categories were added based on previous studies examining the role of this type of questions (for example Lyon et al., 2012) and the appearance of these questions in the material. The frequency of questions was calculated and differences between age groups were compared using Mann-Whitney  $U$  tests.

Thirdly, all evaluative statements concerning distress or discomfort were highlighted and their location within the interview interaction was noted. The qualitative analysis of the interactions within the interviews was inspired by conversation analysis in the sense that it departed from the insight that questions and answers exemplify social action in a typical form: An initiating first part sets up restrictions for a responding second part (Iversen, 2012). A detailed investigation of the interview interaction was not performed. Instead, the analysis focused on the types of questions asked, children's evaluative statements, and the questions forming the context for children's verbalizations of distress or discomfort were examined systematically.

### 2.3.3. Comparing the observed distress/discomfort with the analyzed interviews

In the first step, two of the authors compared the analyzed interviews and the evaluative statements verbalizing the distress/discomfort with the coded observable signs of distress or discomfort at the CHC visit for each child. Four categories emerged: 1) observed and verbalized distress/discomfort; 2) observed but no verbalized; 3) no observed but verbalized; and 4) no observed and no verbalized. In the next step the previously coded interviewer questions, particularly those preceding children's evaluative statements, were added to the categories.

One of the authors who analyzed the relationship had also conducted interviews and participated in the assessment of the visits. The other of these two authors was blind to the results of the assessments of the CHC-visits before analyzing the interviews. In order to reduce bias the child's name had been concealed in the transcribed interviews and 4 months elapsed between coding of the visits and analysis of the interviews. Furthermore, all interviews were analyzed and categorized into either containing statements which verbalized distress/discomfort or not, before comparing the statement of each child with the corresponding visit.

## 3. Results

### 3.1. Observable signs of distress or discomfort during the child health visit

The overall average level of distress/discomfort on the 5-point scale was 2.5 ( $SD = 1.1$ ) and the average discomfort/distress was 2.3 ( $SD = 1.1$ ) and 2.7 ( $SD = 1.2$ ) for 4-year-olds and 5-year-olds respectively. The Mann-Whitney  $U$  test showed no significant difference in discomfort/distress between the groups. Using the dichotomized scale, 42% ( $n = 11$ ) of the children displayed discomfort/distress at the CHC visit. Of the 4-year-olds 46% displayed discomfort and 39% of the 5-year-olds displayed distress. There were no significant differences in the proportions between the age groups.

### 3.2. Verbalization of distress or discomfort in the interviews

Half of the children ( $n = 13$ ) provided evaluative content (physical sensations or emotional responses) and described the specific procedure at the CHC visit as either highly or moderately distressful or causing discomfort. Almost all children expressing any evaluative information were 5 years old ( $n = 12$ ; 92%). Thirteen children did not share any information about distress or discomfort, nearly all of them were aged 4 years ( $n = 12$ ; 92%).

### 3.3. Characteristics of the interviewer questions

The majority of questions posed in the substantive phase of the

interviews were open-ended questions (63.0%) and wh-questions (30.0%). Yes/no questions and multiple-choice questions were used sparsely (3.1%) and leading questions were very rare (0.4%). The proportion of questions was also calculated for 4-year-olds and 5-year-olds separately, and showed that open-ended questions constituted 65.1% and 61.0% respectively, wh-questions 30.3% and 29.7%, yes/no and multiple choice 2.3% and 3.8%, and leading questions 0% and 0.8%. Thus, the question strategies recommended by the NCAC structure were closely followed. Evaluative questions composed 3.4% of the total number of questions for the entire group and 2.3% for children aged 4 years and 4.7% for children aged 5 years. The Mann-Whitney *U* tests revealed that there were no significant differences between the children aged 4 and 5 years for any of the question categories.

3.4. Verbalized distress or discomfort and the preceding interviewer questions

When examining children's statements in relation to the types of questions preceding these statements, different interview trajectories and routes to verbalization of discomfort and distress were revealed. These are summarized in Table 1.

3.4.1. Children verbalizing distress or discomfort

The qualitative analysis revealed that for some children, a narrative invitation or cued invitation was enough to elicit evaluative content and a response verbalizing distress or discomfort. The first extract [Extract 1] illustrating this pattern comes from an interview where the issue of having an injection was brought up as soon as the interview moved into the substantive phase. When the interviewer presented the picture of the CHC and the child had correctly identified it as the subject of conversation, the following dialogue unfolded:

3.4.1.1. Extract 1, child 5 years old.

78 I CHC, you call it CHC, mm, good. That there is outside also, it is the same place.  
 79 Tell me about the last time you were at the CHC.  
 80 R Mm, I don't know, I don't even remember anything, just the shot, it really  
 81 hurt.  
 82 I Really hurt.  
 83 R Mm  
 84 I Tell me more about the shot  
 85 R That it was here [points to the arm].

After first claiming not to remember anything (line 80), the child spontaneously mentioned the injection, and then told the interviewer that "it really hurt" (lines 80–81). In this case, the invitation "tell me

Table 1  
 Number of children who verbalized distress/discomfort in relation to age and type of question.

Type of question	Interview			
	Verbalized		Not verbalized	
	4-year-olds	5-year-olds	4-year-olds	5-year-olds
Invitations only	0	6	10	1
Invitations + evaluative question/s	1	6	2	0
Total	1	12	12	1

about the last time you were at the CHC" resulted in a response where the child was talking about difficult or uncomfortable experiences.

In some of the interviews, invitations were not sufficient in helping children to talk about pain or other difficult issues during the CHC visit. In these cases, verbalization of discomfort or distress tended to follow upon evaluative questions. In the first example illustrating this kind of response from the child [Extract 2], the evaluative question "how was it" to get the injection (line 78) did not explicitly focus on emotional content:

3.4.1.2. Extract 2, child 5 years old.

70 I Mm. Ehm, tell about when you were here the last time, at the doctor's.  
 71 R Eh, she gived me a shot.  
 72 I She gave you a shot, did you say?  
 73 R Yes, here [points to the arm]  
 74 I Ah, in the arm, right.  
 75 R And I also got a sticker here [points to the other arm]  
 76 I And a sticker on the other arm. Okay. What kind of sticker did you get then?  
 77 R Tiger.  
 78 I Tiger, mhm. And how was it to get the shot then?  
 79 R Hurt.  
 80 I It hurt, mm. And when you were and got the shot, who was it that was with  
 81 you then [referring to information previously mentioned by the child]?

In this example, the interviewer asked "how was it" to get the injection and the child's answer was typical for this dataset in that it clarified that it was painful to get the injection ("hurt", line 79), but the child did not elaborate much on what kind of experience this was. On the whole, the verbalizations of distress or discomfort – "pain", "hurt" – did not make it very clear to what extent the event was physically painful only, or emotionally difficult as well. The only example found in this dataset where the child also verbalized emotional distress was an example from an interview which clearly differed from the others when it comes to the number and kind of evaluative questions. In most interviews where evaluative questions were used, they tended to be limited to one or two. In this particular case, the interviewer asked three cognitive and four emotional evaluative questions (all not shown in the extract) in the dialogue following upon the child mentioning getting an injection, thus clearly moved beyond the protocol recommendation to mainly use invitation or cued invitations.

3.4.1.3. Extract 3, child 5 years old.

206 I Mm. How was it to get the shot then?  
 207 R Hurt.  
 208 I Mm.  
 209 R Hurt a lot. (pause)  
 210 I How did that feel then?  
 211 R [Inaudible]  
 212 I Besides that it hurt, how did you feel in your tummy? When you got the shot?  
 213 shot?  
 214 R It was in the arm [shows on the arm]  
 215 I It was in the arm, I know. How did it feel inside, were you happy then too?  
 216 R [Shakes head]  
 217 I How did you feel then?  
 218 R Sad.  
 219 I Sad?

In addition to repeated prompts and a number of evaluative questions, the interviewer also combined an evaluative question with a yes/no question connecting back to an earlier statement from the child about the visit being “fun” (line 203 in the interview transcript, not shown in the extract), a question warranting a yes/no answer: “How did it feel inside, were you happy then too?”. It is in this context the child stated feeling sad when getting the injection (line 218). This somewhat exceptional case – in this dataset – will be discussed further below.

The analysis above focuses on statements about a comparatively high level of distress and discomfort, such as “hurt a lot”. However, it should be noted that some children who were talking about pain and discomfort did so in a way that made it clear that the experience was “not too bad”:

3.4.1.4. Extract 4, child 5 years old.

102 I Tell me what, what happened then?  
 103 R You get to draw a drawing, a figure or some pumpkin or something. And then  
 104 you get a shot and I don't remember what... you get to weigh yourself.  
 105 I Okay [—]  
 115 I And then you got a shot.  
 116 R Mm.  
 117 I How was that then? To get a shot?  
 118 R Not too bad.  
 119 I No.  
 120 R Did not hurt much at all. Not really painful, but a little painful, it stung a bit.  
 121 I It stung a bit.  
 122 R Mm.

The extract comes from an interview where an invitation or reflecting what the child has just said did not seem sufficient to elicit an evaluative answer from the child regarding distress or discomfort (line 115). Here, the evaluative question “how was it then, to get a shot” was added and the child stated that it was “not too bad” (line 118), and then elaborated and described the experience as a little painful (line 120). This evaluation was underscored in several ways by the child who was specifying that it “did not hurt much” and was “not really painful” and also described the pain as burning or stinging rather than sharp or painful.

In this dataset, there were five more cases, of the total of n = 13 of children who expressed distress in their interviews, where the child explicitly stated that the experience of getting an injection was only to some extent a distressing or painful experience.

3.4.2. Children not verbalizing discomfort or distress

Half of the children in the sample (n = 13) did not verbalize experiences of discomfort or distress, i.e. there were no occurrences of evaluative content. What these children have in common is that the interviewer used invitations only, which did not seem to be enough to elicit a response regarding pain or other difficult experiences. In two cases, it was apparent that the children in question did not want to talk about the CHC visit, and the interviews were soon finished.

Another type of interview interaction found in this group of cases was the use of evaluative questions that seemed to undermine rather than support children's verbalizations of discomfort or distress.

3.4.2.1. Extract 5, child 4 years old.

69 R And I got a pirate's patch over my eye, and guess if I saw a letter that was, that  
 70 was on, on a board.  
 71 I Okay, tell me more about that... about the pirate patch  
 72 R That you had to guess right if you saw that letter.  
 73 I Okay, where were the letters, did you say?  
 74 R On a sign [sign]. I was to guess.  
 75 I Did you manage?  
 76 R (Nods)  
 77 I That's good, who was it who asked you to guess the letters?

In this case [Extract 5], the interviewer started off by an invitation, and specified “about the pirate patch” (line 71). When the child went on to talk about guessing, the follow up questions “did you manage” (line 75) was not about how it was to do this or how it felt to be there. Instead, the child was asked to evaluate its own performance and the interviewer responded with a judgment of the child's performance, “That's good” (line 77). A similar example from another interview was when the interviewer asked the child to judge the situation. The interviewer asked “did it go well?” when they were talking about sight and hearing tests during the CHC visits. These types of questions were only directed at children aged four years old.

3.5. The relationship between displayed distress/discomfort, the verbalization of such experiences and the preceding interviewer question

The examples presented above illustrate a range of interview trajectories as well as the different level and kinds of prompts used by the interviewer which form the context for children verbalizing discomfort and distress. When these interview trajectories are related to children's signs of distress or discomfort during their CHC visit, several observations can be made (Table 2).

The first observation is that that none of the 11 children who did show signs of distress or discomfort during the visits verbalized such experiences spontaneously or after an invitation only. In all cases where children showed signs of distress or discomfort and also later verbalized distress or discomfort (five children), the interviewer had used evaluative questions or even yes/no questions as in the case cited in extract

Table 2  
 Number of children with observed distress/discomfort in relation to verbalized distress/discomfort and type of question.

	Observed distress/ discomfort		No observed distress/ discomfort	
	Verbalized	Not verbalized	Verbalized	Not verbalized
4-year-olds (n = 13)				
Type of question				
Invitations only	0	5	0	5
Invitations + evaluative question/s	1	–	–	2
5-year-olds (n = 13)				
Type of question				
Invitations only	0	1	6	0
Invitations + evaluative question/s	4	–	2	0

3, in addition to invitations. The second observation is that of the children who did not show signs of distress or discomfort, half of them still stated that they had experienced the visit as being distressing or causing discomfort. Thirdly, none of the children who verbalized discomfort or distress spontaneously or after just an invitation had shown signs of distress during the visit.

In this dataset, a number of children ( $n = 7$ ) showed neither any signs of distress/discomfort during the visits, nor did they verbalize anything about such emotions or experiences in the interview. They had either shown clearly that they did not want to talk about the visit, or the interviewer only used general invitations or cognitive evaluative questions, focusing on the child's performance or assessment of the situation.

#### 4. Discussion

Understanding young children's emotional responses to situations or actions they experience is important for a number of reasons. For example, in social work or psychotherapy with children, emotional responses are often a key concern. Within the forensic field, the extent to which witnesses include descriptions of their reactions to an event can affect their credibility (Lyon et al., 2012). However, research is scarce on the ability of forensic protocols to elicit evaluative content and in practice most forensic protocols do not include any specific guidelines on how to ask children questions about their emotional, physical or cognitive reactions to their experiences.

The aim of the study was to explore to what extent the modified NCAC interview structure aided children in verbalizing distress or discomfort experienced at their CHC visit. Furthermore, the relationship between children's observable signs of distress or discomfort at the visit and what they later verbalized in the interviews, was also of interest.

##### 4.1. Observable signs of distress or discomfort during the child health visit

We first investigated to what extent children displayed observable signs of distress or discomfort during their CHC visit. The results showed that almost half of the 4-year-olds displayed moderate to severe discomfort in relation to the optometric exam and a significant number of the 5-year-olds showed moderate to severe distress in relation to the vaccination. It is not surprising that a considerable number of the 5-year-olds displayed signs of distress during their vaccination considering the potential pain it causes and that numerous children are afraid of getting a vaccination (Taddio et al., 2012). However, the majority of children aged 5 years did not show explicit signs of high distress, which could be due to a better ability to regulate emotions (Thompson & Goodman, 2010). Other factors, such as the child's coping strategies, the accompanying parent's coping and reactions and/or the nurse's behavior, as well as the interactional patterns between them, could also have played a role. For 4-year-olds the results were a bit more unexpected, as we did not anticipate that as many as almost half of the children would show clear signs of discomfort. Most research on children's experiences of medical procedures focus on pain and distress and little is known about experiences of other types of discomfort, such as scary or cognitively taxing procedures. In sum, these visits included procedures that children to various degrees appeared to experience as negative.

##### 4.2. Verbalized evaluative content and the preceding interviewer questions

Half of the children ( $n = 13$ ) reported evaluative content in their descriptions of the medical procedures and the other children provided no evaluative content at all. These differences in reporting were related to children's age as almost all five-year-olds reported evaluative content while virtually none of the children aged four years old provided any such information. Children's ability to verbally produce information increases with age and this development also encompasses using

'emotion words' to describe experiences (Fivush & Baker-Ward, 2005). The age-differences we discovered could be understood on the basis of the improved ability of the older children to verbalize their emotional experiences. Another explanation could be the kind of emotion the child has had during the event. In our study, the younger children could have experienced the HVOT exam as discomforting due to not understanding or failing to complete the task. Such experiences are more likely to evoke shame, an emotion that could be more difficult than pain to recognize and to verbalize (Wellman et al., 1995). This result is in line with previous research suggesting that children's ability not only to verbalize but also to understand their emotions generally improves and becomes more complex with age (Fivush & Nelson, 2006; Weede Alexander, Quas, & Goodman, 2002). However, the difference between the four- and five-year olds may also, at least to some extent, be explained by the difference as regards the number of evaluative questions asked (see further below).

When adding the qualitative analysis of interviewer question in relation to children's verbalized evaluative content, interesting question-response patterns were uncovered. The results showed that all children were first given the opportunity to narrate in response to open-ended questions. In relation to these questions, only six out of 26 children spontaneously included evaluative information in their responses. When the interviewer added an evaluative question, such as "How did it feel", following the open-ended question, this aided more children to verbalize their emotional reactions. All seven children who received an evaluative question with emotional content also provided an evaluative answer. Thus, open-ended questions were enough to aid some children in sharing evaluative content, but for most children they seemed to be insufficient. Evaluative questions on the other hand appeared to be an important factor in aiding children to verbalize their experiences of distress or discomfort. These results are in line with previous research demonstrating that children seldom share evaluative content spontaneously (Westcott & Kynan, 2004) and that evaluative questions are superior when aiming for children to share their emotional and physical reactions to events (Lyon et al., 2012). Furthermore, in the revised NICHD protocol, prompts are included to support children to expand on their spontaneous references to emotion (Hershkowitz et al., 2015). Our results point to this approach not being sufficient, as children might need the adult to introduce the emotional content as something important through asking unbiased evaluative questions.

A closer look at children's statements revealed that even in response to an evaluative question, the children's evaluative statements were still neither detailed nor nuanced. Children gave short descriptions of their experiences of distress or discomfort, such as "hurt" or "pain" and it was not very clear whether the procedure was physically painful and/or emotionally difficult as well. The only exception from this pattern was the interview where the interviewer asked several evaluative questions, both with a cognitive and emotional focus. This was also the only example where the interviewer continued to ask evaluative questions even after the child had answered by saying that the injection "hurt". This implies that it could be insufficient for the interviewer to pose only one or two evaluative questions and perhaps what is needed is for the interviewer to ask for emotional and physical reactions several times.

The NCAC Child Forensic Interview Structure does not provide clear guidelines on if and how to pose evaluative questions. This problem is also present in other forensic interview protocols (Ahern & Lyon, 2013). The interviewers in our study did not pose evaluative questions in a systematic way, for example, they did not ask all children the same questions. The differences were related to the child's age as all children aged 5 years were first asked open-ended questions and when these were not enough to elicit evaluative content, they were also asked evaluative questions (except one). This was not the case for 4-year-olds for which the majority were only asked open-ended questions without follow-up evaluative question. However, two children aged 4 years were asked evaluative questions that forced the child to evaluate her or

his performance or judge the situation. These questions, which could be interpreted as a form of evaluative enquiry, did not aid the child in sharing any evaluative content, but rather had the opposite effect and closed the conversation. These results indicate that the interviewers approached the 4- and 5-year-olds differently, something that might be explained by their awareness of the different procedures at the CHC visit and their possible emotional impact. There is a risk that interviewer preconceptions affect both the questioning and children's answers, something which has rendered substantial research attention (Bruck & Ceci, 1999; Goodman, Sharma, Thomas, & Constadine, 1995; Quas et al., 2007). In our study, this potential interviewer bias did not lead to the interviewers using less open-ended questions or asking leading questions regarding evaluative content. When interviewers maintain high quality interviewing techniques, such as open questions, it reduces the effects of interviewer confirmation bias (Powell, Hughes-Scholes, & Sharman, 2012).

In summary, the two age groups were given different opportunities to verbalize their emotional experiences; positive deviations from the forensic interview structure were carried out with the 5-year-olds and negative ones with the 4-year-olds. It is thus difficult to assess to what extent the silence about discomfort or distress was an expression of the children's experience, or of the fact that invitation only or cognitively oriented evaluative questions were insufficient to help children verbalize such experiences in this context. These results further stress the importance of and the need for clear guidance on how to ask children about their emotional reactions.

These findings also raise questions regarding the suitability of the protocol in its current form in relation to interviews where emotional content is sought. If the knowledge from the forensic field of interviewing children is transferred to other contexts, such as social work, risk assessment or health care, where the child's emotional and relational experiences are important, then the interview guidelines need to be developed to increase the opportunity for children to verbalize their emotional experiences and reactions and to minimize the risk of interviewer preconception regarding evaluative content.

#### 4.3. *The relationship between distress or discomfort at the CHC visit, the verbalization in the interview and preceding interviewer questions*

The examination of the relationship between distress or discomfort at the health visit and children's verbalization or lack thereof in the interviews, revealed some interesting findings. The most thought evoking result was that the children who displayed distress during the visit were less likely to describe it in response to open-ended questions. These children seemed to require evaluative questions to verbalize their experiences. Previous research has shown that how distressful an event is affects both how much information children provide about the event (Fivush, McDermott Sales, Goldberg, Bahrack, & Parker, 2004; Merritt, Ornstein, & Spicker, 1994) and the quality of memory of that experience (Peterson, 2010). The children might have experienced more intense negative emotions during the visit and found it more demanding to express them. However, the relationship between stress and memory is complex and not completely consistent (Weede Alexander et al., 2002). Children's willingness to talk about stressful events (Peterson, 2010; Quas, Rush, Yim, & Nikolayev, 2014), as well as how used they are to articulating their negative emotional experiences (Fivush, Hazzard, McDermott Sales, Sarfati, & Brown, 2003; Lagattuta & Wellman, 2002), might also play a role in understanding our results.

Some of the children who displayed distress or discomfort were never provided with evaluative questions, thus, they were not given the opportunity via increased scaffolding to verbalize their subjective reactions. These children were all aged 4 years and studies have shown that younger children might need more cued invitations (Lamb et al., 2003) and/or cues (Hamond & Fivush, 1991), in addition to open-ended questions, to aid their memory retrieval. These results might also apply to evaluative information.

The other group of children where there was inconsistency in the exhibited and described distress were those children who showed no signs of distress or discomfort at the CHC visit, but who spontaneously described such experiences. As discussed previously these children, who were all 5 years of age, could have had a better developed ability to regulate their emotional responses during the visit and to verbalize their emotional experiences.

Our results showed that it is not sufficient to use the observable behavior of distress or discomfort to draw conclusions about children's physical or emotional experiences of a situation. Thus, in settings where the child's sensations and emotional experiences influence decisions or outcomes it is important to understand that, by not asking explicitly about these aspects, vital information might not surface. We found no examples of children starting to fabricate stories or diverge from the interview when asked about their emotional experiences. On the contrary, the interview continued to flow well and children stayed engaged.

## 5. Limitations

There are a number of limitations of our study that needs to be considered. First, the sample size was small. In order to know if the patterns discovered in our material are generalizable, both when it comes to the question-response patterns and the relationship between displayed and verbalized distress, quantitative studies with larger samples are needed. Another limitation is the homogenous sample. The majority of the children came from families with highly educated parents born in Sweden. Previous research has demonstrated that culture affects how parents talk about emotions with their children and which emotions are discussed the most (Wang, 2008). Future studies with heterogeneous groups are therefore needed.

Third, the children were interviewed about a mildly stressful event. The forensic interview protocol is mainly used to interview children when they are likely to have been exposed to abuse or other severe conditions known to be highly stressful, confusing and severe. The complex and sometimes conflicting emotions in such situations can be even more difficult to verbalize. Therefore, future studies investigating the role of the current forensic protocol and additional evaluative questions with children exposed to abuse are needed.

## 6. Conclusions

A considerable proportion of the children exhibited distress or discomfort during their CHC visit. Most children who described negative experiences did so in response to evaluative questions. This pattern was particularly clear for children displaying distress or discomfort during their visit. When only invitations were used, following the forensic interview structure recommendations regarding type of questions, it was sufficient to aid only some children in verbalizing their emotional experiences. However, for the majority of children the open-ended questions were not enough to elicit evaluative statements. There is a clear need for protocol development and for more research investigating exactly how and when evaluative questions should be posed and whether this differs depending on severity of experience as well as the children's age. As components derived from the research on forensic interview techniques are currently disseminated to other fields of practice, protocol development is urgent for that reason as well.

## Conflict of interest

None.

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