

Allegation rates in forensic child abuse investigations: Comparing the Revised and  
Standard NICHD Protocols

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This research was made possible by grant from the Nuffield Foundation. The authors are grateful to the forensic interviewers in the Israeli Department of Child Investigation and their supervisor for making the study possible. Carmit Katz is now at Tel Aviv University. Correspondence and reprint requests should be addressed to Michael E Lamb, Department of Psychology, University of Cambridge, Free School Lane, Cambridge CB2 3RQ, United Kingdom. E-mail: [mel37@cam.ac.uk](mailto:mel37@cam.ac.uk)

## Abstract

426 4- to 13-year-old suspected victims of intra-familial abuse were interviewed using either the NICHD Investigative Interview Standard Protocol (SP) or a Revised version of this Protocol (RP) designed to both enhance rapport between children and interviewers and provide additional non-suggestive support to suspected victims who might be reluctant to make allegations. All allegations were corroborated by independent evidence documenting that the alleged abuse had indeed taken place. Analyses revealed that children were significantly more likely to make allegations of abuse when the RP rather than the SP was employed. These results suggest that supportive forensic interviewing may facilitate valid reports of abuse by young victims who might otherwise be unwilling to make allegations.

**Keywords:** Child abuse - Investigation - Allegation - Social support

Many suspected victims of child maltreatment are reluctant to allege abuse when formally interviewed in forensic contexts, even when there is clear evidence that they were in fact abused. Investigative protocols, including the NICHD Protocol (Lamb, Hershkowitz, Orbach, & Esplin, 2008), emphasize techniques that help motivated children to report information about experienced events but pay less attention to the motivational factors that make some children reluctant to disclose abuse or make allegations thereof. Recent research has yielded new insight into the dynamics of interviews with reluctant children (Hershkowitz, Horowitz, & Lamb, 2007; Hershkowitz, Orbach, Lamb, Sternberg, & Horowitz, 2006; Orbach, Shiloach, & Lamb, 2007), however, and this has prompted an attempt to revise the NICHD Protocol accordingly. The Revised Protocol employed in the present study was designed to help interviewers deal more effectively with reluctant children, and the present study describes a field test of this new Protocol designed to assess its association with allegation rates.

Reviews of the literature suggest that a substantial proportion of alleged victims do not report abuse when formally interviewed, with estimates varying depending on the context in which the interviews were conducted (London, Bruck, Ceci, & Shuman, 2005, 2007). In the context of forensic or assessment interviews, allegation rates range widely, with higher rates consistently reported when there is corroborative evidence or when the children have reported abuse prior to the investigation. Allegation rates range from 47% to 62% for non-substantiated cases and from 76% to 96% for substantiated cases (de Voe & Faller, 1999; DiPietro et al., 1997; Dubowitz, Black, & Harrington, 1992; Elliott & Briere, 1994; Keary & Fitzpatrick, 1994). They range from 74% to 93% when children have previously talked of being abused but from only 25% to 40% when they have not reported abuse earlier (de Voe & Faller, 1999; DiPietro et al., 1997; Gries, Goh, & Cavanaugh,

1996; Keary & Fitzpatrick, 1994), suggesting that an early discussion of the alleged abuse is a strong predictor of children's willingness to make formal allegations.

Developmental differences in [allegation](#) rates have also been identified, with preschoolers much less likely than older children to report suspected abuse when questioned (DiPietro et al., 1997; Gries et al., 1996; Keary & Fitzpatrick, 1994; Pipe, Lamb, Orbach, Stewart, Sternberg & Esplin, 2007; Smith et al., 2000; Wood et al., 1996). This trend might be attributable to a variety of factors, including elevated levels of unwarranted suspicion on the part of adults when young children are involved as well as cognitive, communicative and emotional deficits in the ability of young children to understand interviewers and/or to describe experiences of abuse comprehensibly. Some researchers have also reported that boys are more reluctant than girls to report abuse (Ghetti & Goodman, 2001; Gries et al., 1996; Levesque, 1994).

Further understanding of the reasons why suspected victims do or do not report abuse has been impeded by both variability in and a lack of information about the ways in which children have been interviewed (London et al., 2005; Pipe et al., 2007). Inappropriate questioning may explain both under- and over- reporting of abuse (London et al., 2005; Poole & Lindsay, 1998) but most studies of reporting rates do not provide sufficient information about investigative practices. However, some relevant studies (Hershkowitz et al., 2005, 2007; Pipe et al., 2007) have focused on investigative interviews conducted in accordance with a single standardized protocol - the NICHD Investigative Interview Protocol. This Protocol built on research documenting the cognitive, linguistic, and social factors that limit the informativeness of children's accounts of abuse (for a comprehensive review, see Lamb et al., 2008). The Protocol enhances the informativeness of children who need non-suggestive assistance generating

and organizing their accounts of experienced abuse. Field studies in Israel, the U.S., Canada, and the UK showed that children interviewed using the Protocol provided 3 to 4 times more free-recall details about substantiated incidents of abuse than children questioned using 'standard' interview techniques (for a summary of findings, see Lamb et al., 2008). Furthermore, allegation rates appear higher in studies examining Protocol-guided interviews than in the other studies reviewed by London and her colleagues (2005, 2007). For example, Pipe et al. (2007) and Hershkowitz et al. (2005) reported allegation rates of 83% and 71%, respectively, thereby underscoring the importance of appropriate interviewing techniques. However, remarkably lower rates of allegation were observed in some studies, as discussed below.

Research involving Protocol-guided interviews has yielded insights into the factors influencing children's willingness to make allegations of abuse. Most importantly, it is clear that allegation rates vary dramatically depending on the relationship between alleged victims and abusers. Children are much less likely to make accusations about parents or parent figures as opposed to other suspected perpetrators, with over half of the children denying suspected abuse by a parent figure when directly asked by an investigative interviewer (Hershkowitz et al., 2005); this trend is particularly marked when the suspected victims are males or are suspected victims of sexual abuse (Hershkowitz et al., 2005).

Hershkowitz et al. (2005) also found that the type of abuse was a factor associated with allegations by suspected victims of intra-familial abuse; lower rates of allegation occurred when children were suspected victims of sexual as opposed to physical abuse. As predicted by Malloy, Lyon and Quas' (2007) model of filial dependency, the greater the suspected victims' dependence on their parents (e.g., co-residence, being only children),

furthermore, the greater their tendency to deny that they had been abused (Hershkowitz, Lanes et al., 2007).

Other studies have focused on the interactions between interviewers and children in the course of Protocol-guided interviews (Hershkowitz, Horowitz et al., 2007; Hershkowitz et al., 2006; Katz et al., 2012; Orbach et al., 2007). In each study, reluctant children avoided establishing rapport with the interviewers and signaled their reluctance verbally and non-verbally in the pre-substantive phase of the interview, with manifest reluctance increasing as the interviews proceeded. In a study of interviews with children whose victimization had been independently corroborated, Hershkowitz et al. (2006) found that interviewers tended to respond to reluctance counter-productively by a) putting pressure on reluctant children rather than giving them support, b) shifting the discussion to sensitive issues before the children seemed comfortable, and c) using intrusive rather than open-ended prompts when exploring the possibility that abuse might have occurred. A related study revealed that reluctant disclosers (those who disclosed in response to focused recognition memory prompts rather than to open-ended free-recall prompts) reported fewer abuse-related details than non-reluctant disclosers did (Orbach et al., 2007). Accordingly, Hershkowitz et al. (2006) recommended that interviewers should refrain from raising abuse-related issues before children appear comfortable and cooperative and that they should make greater-than-normal efforts to establish rapport with and be supportive of reluctant children.

The value of rapport building and emotional support when interviewing reluctant children has been emphasized by other researchers, too. Whether children are being interviewed in clinical (Boggs & Eyberg, 1990; Morgan & Friedemann, 1988; Wood, McClure & Birch, 1996), evaluative (Kanfer, Eyberg & Krahn, 1992; Powell & Lancaster,

2003) or investigative (Aldridge & Wood, 1998; Goodman & Bottoms, 1993; Hynan, 1999; McBride, 1996; Powell & Thomson, 1994; Ruddock, 2006) contexts, meaningful rapport between children and interviewers seems to facilitate communication and to encourage children to affirm and describe their traumatic experiences.

Rapport building is a common practice when working with children professionally (Suzannet et al., 2007); it is designed to help create a comfortable and safe atmosphere (Sattler, 1998), convey acceptance, understanding, and respect to the children (Phares, 1984), promote confidence and cooperation (Kamphaus & Frick, 1996) or create interpersonal trust (Hershkowitz, 2011). Rotenberg (1986, 1995) posited that interpersonal trust has three elements: reliability, which refers to the fulfillment of promise; honesty, which refers to truth telling and sincere engagement; and emotional safety, referring to avoidance and protection from emotional harm, such as being receptive to disclosures, keeping confidentiality, and avoiding criticism and embarrassment. A review of studies examining the effects of rapport-building on a wide range of treatment outcomes among children (Suzannet, 2007) revealed positive effects on therapeutic change, cooperation with therapeutic tasks, and retention in treatment.

Effective rapport-building is believed to help children cope better with anxiety, empower them, and increase their levels of trust and engagement, thereby motivating them to discuss their experiences of abuse (e.g., Quas & Lench, 2007; Siegman & Reynolds, 1983). In memory tasks such as forensic interviews, interviewers who establish rapport with their interviewees and behave warmly can also reduce suggestibility and increase the accuracy of statements provided by children (Goodman et al., 1991; Hershkowitz et al., 2006) and adults (Collins, Lincoln & Frank, 2002; Vallano & Compo, 2011) while increasing the number of

relevant details provided (Davies, Westcott & Horan, 2000; Hershkowitz, 2009; Roberts, Lamb & Sternberg, 2004; Sternberg et al., 1997; Teoh & Lamb, 2010).

The benefits of supportive interviewing conditions have been examined in several laboratory analogue studies as well. These studies suggest that supportiveness both improves the accuracy of information provided by children (Greenstock & Pipe, 1997 exp. 2; Moston, 1992) and reduces their suggestibility (Cornah & Memon, 1996; Greenstock & Pipe, 1997, exp.1, but see also Greenstock & Pipe, 1996; Quas et al., 2005). Compared to non-supportive interviewers, supportive interviewers elicit more accurate free-recall information from preschoolers (Goodman et al., 1991), even after delays as long as one year (Bottoms, Quas & Davis, 2007). Children in supportive conditions are more resistant to misleading questions when their memory is tested immediately after an event (Carter, Bottoms & Levine, 1996; Davis & Bottoms, 2002) or after a 4-week delay (Goodman et al., 1991, but see also Imhoff & Baker-Ward, 1999) while children in non-supportive conditions tend to be more suggestible, especially in high anxiety states, providing incorrect details in response to misleading questions (Almerigogna, Ost, Bull & Akehust, 2007). In addition, children in non-supportive conditions report being less comfortable and happy than in supportive conditions (Davis & Bottoms, 2002; Quas et al., 2004); this may cause anxiety and make it more difficult to search memory, to narrate and to correct inaccurate statements made by interviewers (Nathanson & Saywitz, 2003; Almerigogna et al., 2007)

Although the effects of support may vary depending on individual differences in children's ages and talkativeness (Hershkowitz, 2009), social support networks, attachment styles, or working memory capacity (Bottoms et al., 2007; Davies & Bottoms, 2002), there is [almost](#) no evidence that interviewer supportiveness adversely affects performance, unless it is associated with suggestive questioning (Bottoms et al., 2007, [but see Goodman et al. 1991](#)).

The challenge in forensic interviews is therefore to increase interviewer support without pairing support with leading or suggestive prompts that elicit substantive information. Although research on children's denials of transgressions shows that directive and yes-no questions reduce the number of false denials more effectively than open-ended prompts do (Bottoms et al., 2002; Pipe & Wilson, 1994), such questions also tend to elicit false reports when children have been coached (Quas et al., 2007). As a result, Lyon et al. (2008) warn that direct questions may affect disclosure not by increasing honesty but by increasing acquiescence.

Similarly, Lyon and his colleagues (Lyon & Dorado, 2008; Lyon, Malloy & Quas, 2008) have shown, in studies of maltreated children who were coached to conceal forbidden play, that supportive comments should not be specific. Although specific reassurance (i.e., "It's okay if you played with the toy house") was associated with fewer false denials, it also resulted in false admissions by some children who had not played with the forbidden toys; only general reassurance effectively modulated the risks of both false denials and false admissions. Thus, although researchers recommend that children should be reassured about the consequences of disclosure (Bussey & Grimbeek, 1995; Wagland & Bussey, 2005), it appears that reassurance can be provided safely only when expressed in general terms.

The standard NICHD Protocol (SP) clearly helps cooperative children report information about experienced events (see Lamb et al., 2008, for a review) but it pays little attention to the important and complicated motivational factors that make some children unwilling to talk about their experiences. In response to research on interviews with reluctant children, therefore, we have revised the SP in ways designed to help interviewers both build better rapport with children at the outset and provide children with more emotional support throughout the interview (see description in the Method section).

The association between use of the Revised Protocol (RP) and children's willingness to make allegations was tested in the current study in a large sample (N = 426) of children for whom there was independent evidence that intra-familial abuse had taken place. Allegations were coded when the children reported any of a range of abusive physical (hitting, use of objects, injury) or sexual (touch over or under clothes; vaginal, anal or oral penetration) acts, allegedly performed by the suspected perpetrators mentioned in complaints made to the police. Suspected victims of intra-familial abuse were the focus because they have been shown to avoid making allegations when abuse is suspected. Prior to conducting the current study, we analyzed the rapport-building phases of 99 RP and 100 SP interviews with children who had made allegations (Hershkowitz, Lamb, Katz, & Malloy, 2013). These analyses established that the youth investigators were following the RP instructions, establishing better rapport and providing interviewees with more support than did interviewers using the SP. Specifically, we found that interviewers provided more supportive and fewer unsupportive comments to reluctant children in RP than in SP interviews and that children in RP interviews showed fewer signs of reluctance. Use of the RP thus changed the negative dynamics between reluctant children and their interviewers that had been observed previously (Hershkowitz et al., 2006).

Because experts warn that non-abused children can make false allegations of abuse when interviewed suggestively, it was especially important to compare the questioning styles employed in the rapport-building phases studied by Hershkowitz et al. (2013). A prompt by prompt analysis revealed that the questioning strategies employed in the two conditions did not differ: RP and SP interviews contained equally low proportions of recognition prompts, including option-posing and suggestive prompts while open-ended recall strategies dominated both types of interviews. Taken together, the findings suggested that, when using

the RP rather than the SP, interviewers were more supportive but not more suggestive in the pre-substantive phases of the interviews.

Because use of the RP seemed to make reluctant children more cooperative, the present study was designed to compare the rates of allegations when either the RP or SP procedures were followed when interviewing suspected victims of intra-familial child abuse. We focused on suspected victims of intra-familial abuse because, as noted above, they are less likely to make allegations when interviewed formally.

The literature reviewed above suggests that the tendency to make an allegation when formally interviewed is affected by the child's relationship to the suspect, age and gender, as well as the type of abuse suspected and whether or not there has been a prior disclosure. According to the filial dependency model (Malloy et al., 2007), denial of abuse may reflect the susceptibility of child victims to influence or pressure from familial adults on whom they depend. We thus expected that reporting would be impeded by close relationships with the suspects, as well as younger age, being male, not having reported before, and alleging sexual rather than physical abuse. However, supportive interviewing was expected to reduce reluctance, and so the more supportive interviews conducted using the RP were expected to yield higher rates of allegations than those guided by the SP.

## Method

### Sample

The sample consisted of 426 Israeli children (SP: 165; RP: 261), 232 boys and 194 girls (SP: 90 boys, 75 girls; RP: 142 boys, 119 girls) aged 4 to 13 years ( $M=8.08$ ,  $SD=2.57$ ; SP:  $M=8.02$ ,  $SD=2.55$ ; RP:  $M=8.11$ ,  $SD=2.58$ ) who were referred for

investigation following suspicions of physical (n=408; SP:159, RP:239 ) or sexual (n=18; SP: 6, RP:12) abuse by family members. Most suspected perpetrators were biologically related to the children (n=375; SP: 144, RP: 231), but some were step-parents and step-siblings (n=51; SP: 21, RP: 30). All cases were corroborated by one or more forms of independent external evidence, including suspects' admissions, dis-interested eyewitness testimony, medical evidence (including observable physical injuries), and material evidence (Horowitz, Lamb, Esplin, Boychuk, Reiter-Lavery, & Krispin, 1995). Over one third of the children (n=145, SP: 55, RP: 90) made a prior disclosure to disinterested figures or relevant professionals, such as school counselors or psychologists. Children in the Revised and Standard Protocol conditions did not differ significantly with respect to age, gender, type of abuse, relationship to suspect, or prior disclosure. This sample of *corroborated* cases was selected from among all interviews (N= 1424) performed during the study period because independent corroborative evidence had been obtained and recorded in the case files. We thus excluded interviews involving 496 boys and 502 girls (SP: 235 boys, 213 girls; RP: 261 boys, 289 girls) aged 4 to 13 years (M=8. 24, SD=2. 51; SP: M=8. 16, SD=2. 48; RP: M=8. 31, SD=2.53), who were suspected victims of physical (n=814; SP: 371, RP: 443) or sexual (n=184; SP: 77, RP: 107) abuse by family members but whose victimization had not been corroborated.

The study design involved a pre-post intervention test. Seven experienced child interviewers from all regions of Israel conducted a total of 613 interviews using the Standard NICHD Investigative Interview Protocol (SP) and thereafter conducted 811 interviews using the Revised Protocol (RP). Use of the Standard Protocol has been mandatory in Israel since 1996 and all interviewers were trained to use it before the study began. The interviewers conducted interviews using the Standard Protocol for 8 months

before being introduced to the Revised Protocol in 2-day-long sessions during which the rationale for the revisions was explained and the new interventions practiced. They then conducted interviews using the Revised Protocol for 8 months. All interviews performed by this group of interviewers pre- and post- RP training during the study period were considered for inclusion, provided that the children were suspected victims of intra-familial abuse. Throughout the study, individual and group supervision was provided monthly to participating interviewers by two of the authors. In an effort to keep the amount of supervision similar in the two periods of time, supervision on Standard Protocol interviews focused on cognitive but not socio-emotional factors, whereas supervision on Revised Protocol interviews focused exclusively on socio-emotional factors.

The pre-post intervention design was selected for the purpose of this study because it was essential to keep the interviewers unaware of the proposed revisions to the Protocol when conducting SP interviews. Treatment diffusion from research to control groups can threaten validity (Shadish, Cooke, & Campbell, 2002) especially when there is physical proximity between the groups. Although using two experimental groups simultaneously would have permitted the random assignment of children to procedures and eliminated order effects, it would inevitably have involved leakage of information regarding the additional supportive elements included in the RP, because peer supervision is common in the collaborating department and interviewers share and discuss their interviews on a daily basis. Therefore, in order to avoid the diffusion of RP practices to SP interviews, the interviewers were only introduced to and trained to use the RP after they had performed all SP interviews. This non-random pre-post intervention design can only be deemed quasi-experimental and the design has some vulnerabilities, including maturation or training effects (Shadish, Cooke, & Campbell, 2002). Because the cumulative effects of

further experience and training constitute an alternative explanation for group differences in allegation rates, the amount of supervision provided to interviewers in the two groups was equated, with only the focus differing. Of course, in pre-post intervention designs, the comparability of the groups must be determined before data analysis, with efforts made to control statistically for differences when they occur, as we did in the current study.

Despite their weaknesses, pre- post designs often represent preferable compromises in the complex reality of ecologically valid field studies.

### The NICHD Investigative Interview Protocol

The NICHD Protocol (Lamb et al., 2008) is fully structured, covering all phases of the investigative interview. In the introductory phase, interviewers introduce themselves, clarify the children's task (the need to describe actually experienced events truthfully and in detail), and explain the ground rules and expectations (i.e., that they can and should say 'I don't remember', 'I don't know', 'I don't understand', or correct the interviewers when appropriate). The rapport-building phase comprises two sections. The first is a structured open-ended section designed to encourage children to provide personally meaningful information. In the second section, children are prompted to describe in detail one recently experienced event in order to practice the retrieval of episodic memory and further develop rapport between children and interviewers. In addition to its rapport building function, this phase of the interview is designed to simulate both the open-ended investigative strategies and techniques used in the substantive phase and the related pattern of interaction between interviewers and children, while demonstrating to children the specific level of detail expected of them.

In a transitional phase between the pre-substantive and the substantive parts of the

interview, open-ended prompts are used to identify the target event/s to be investigated. If the child has not alleged abuse in response to open-ended prompts, the interviewer proceeds to gradually narrowing prompts, making reference to available information about previous disclosures, physical marks or other evidence only if necessary. As soon as an allegation is obtained, the substantive part of the interview takes place (for a description of the full Protocol, see Lamb et al., 2008).

### The Revised NICHD Investigative Interview Protocol.

Several changes and additions were made to the Protocol for the purposes of this study. In order to enhance the children's trust and cooperation, the rapport building preceded (rather than followed) explanation of the ground rules and expectations, and additional guidance was provided to interviewers with respect to building and maintaining rapport. In addition to inviting narratives about recent experiences during the rapport-building phase and asking the children to provide more information about personally meaningful topics using free-recall invitations, interviewers were encouraged to address the children by name, welcome them (" I am glad to meet you today, [*child's name*]"), express care ("How are you doing?") and interest in the children's experiences ("I really want to know about things that have happened to you"), and echo the children's feelings ("You say you were [*sad/angry/the feeling mentioned*]"), to acknowledge such feelings("I see/ I understand what you're saying") or to explore them ("Tell me more about [*the feeling*]"), and to ask the children to provide more information about personally meaningful topics using free-recall invitations. The revised instructions advised interviewers to encourage the children verbally and nonverbally (leaning towards the child, smiling, and establishing eye contact) to describe experienced events in both the pre-substantive and substantive portions of the interview. Thanks, appreciation, and

positive reinforcement (“thank you for sharing that with me” or “you’re really helping me understand”) of the children’s efforts, but not their specific contents, were recommended. Similarly, expressions of empathy with the children’s expressed feelings or difficulties regarding the interview experience (“I know *[it is a long interview/there are many questions/other difficulties the child expressed]*” or “I can see that *[you are tired /it is difficult for you to talk]*”), but not regarding past experiences, were encouraged and supportive interventions such as legitimizing expression (“here you can talk about everything that happened to you” or “here it is okay to say bad words”), generalizing the child's difficulties in the interview (“ many children have secrets that they do not talk about. If you have a secret, I am a person who you can trust and share it with”), offering help (“*[child’s name]*, if it is difficult for you to talk about it, how can I make it easier for you?”) or (“ if it is difficult to talk about it, perhaps you could write it down”) and reassuring him/her when possible (“don't worry, I won't tell the other children”) or expressing optimism (“*[child’s name]*, please try explaining that, I think you can”) that he/she can overcome the difficulty were also recommended. When children reported abuse, but expressed reluctance about discussing it, containment (“you can trust me and tell me things that have happened to you”) or encouragement practices (“it is really important that you tell me”) were recommended, as was removing the responsibility from the child (“when somebody hurts a child, it is not the child's fault”).

### Analytic strategy

Fisher's Exact tests were employed to explore differences with respect to the rates (percents) of allegations in the whole sample, as a function of interviewers' identity and Protocol version. Spearman correlations were then computed between all variables included in the analyses in order to detect possible intercorrelations and multicollinearity.

Logistic HLM models (Hierarchical Linear Models) for nesting designs was then employed in an attempt to determine whether the type of Protocol predicted whether or not children would make allegations after controlling for other possible influences. Because some age groups are typically characterized by lower allegation rates, age was treated as a categorical variable in Fisher's Exact tests and as a continuous variable in the HLM model.

## Results

### The association between the variables tested

More than half of the children made allegations of abuse when interviewed: The allegation rate was 56.1% and a Fisher's Exact test showed that rates of allegations varied within the group of interviewers, ranging from 43.2 % to 70.4% ( $p=.036$ ).

Spearman correlations were then computed between all variables included in the study: age (preschoolers or older), gender, relationship to suspect, previous reporting, abuse type, Protocol version and whether or not allegation was made. Table 2 shows that making an allegation was significantly correlated with age, gender, previous reporting and Protocol version in the expected directions. In addition, age was positively correlated with previous disclosure, gender with relation to suspect and type of abuse (females alleging more sexual abuse and more abuse by biological parents), and relation to suspect was correlated with abuse type (physical abuse more often involved biological parents).

### The association between Protocol type and allegation rates

Fisher's Exact tests showed that allegation rates were significantly higher when the RP (59.8%) rather than the SP (50.3%) was used ( $p=.035$ ), representing allegations by an additional 18.8% of the children (see Table 1). Protocol differences varied according to

the interviewers' identity ( $p=.035$ ).

A logistic HLM model was then generated and tested to assess the association between Protocol version and allegation rates, after controlling for the effects of other variables and [reflecting the fact](#) that children were nested within interviewers. In addition to Protocol version, individual variables (child age and gender, type of suspected abuse, relation to suspect, previous report) were tested as fixed effects while interviewer's identity was tested as a random effect (see table [3](#)). The dependent measure was [whether or not the child reported being abused](#) (No= 0, Yes=1). Despite the inter-correlations between predictive variables reported above, no multicollinearity was detected (all VIF's [were](#) lower than 2).

Significant fixed effects emerged for gender ( $p=.003$ ) and previous reporting ( $p<.001$ ), while Protocol version significantly predicted allegation once the effects of other factors (including interviewer's identity) were taken into account ( $p<.036$ ). Using the RP significantly increased the odds that children would make allegations ( $\text{Exp(B)}= 1.568$ ;  $F(6,419) = 5.374$ ,  $p<.001$ ), with the model correctly classifying 64.1% of the cases--50.3% of those without allegations and 74.9% of those with allegations.

Because the sub-sample of children alleging sexual abuse was small ( $n=18$ ), this model was tested again including only those children alleging physical abuse ( $n=408$ ), with the type of abuse no longer included as a fixed factor. Very similar fixed effects emerged for gender ( $p=.004$ ) and previous reporting ( $p<.001$ ), and again Protocol version significantly predicted allegation once the effects of other factors (including interviewer's identity) were taken into account ( $p<.046$ ). Using the RP significantly increased the odds that children would make allegations ( $\text{Exp(B)}= 1.547$ ;  $F(5,403) = 7.077$ ,  $p<.001$ ), with

the model correctly classifying 64% of the cases--49.7% of those without allegations and 74.9% of those with allegations.

The model was then tested including the whole sample as well as when only including those who alleged physical abuse, with the addition of interactions between Protocol version and individual variables--age and gender, abuse type (for the whole sample model), relationship to perpetrators, and previous reporting--as fixed factors. No significant interactions were evident in either model.

## Discussion

This field study benefited from 1) a focus on suspected victims known from previous research to avoid making allegations of abuse [suspected victims of intra-familial abuse], and 2) a sample of investigative interviews of suspected child abuse victims, for all of whom there was independent corroboration that the children had indeed been abused. Analyses reported above clearly showed that proportionately more of these children made valid allegations of abuse when interviewed using the RP rather than the SP. This effect was significant when we examined children alleging either physical or sexual abuse by family members, as well as when we focused only on children who made allegations of physical abuse. Too few children made allegations of sexual abuse to allow us to test the model in relation to these cases alone, and thus the findings cannot be generalized to sexual abuse cases.

As expected, the data replicated some previously reported trends regarding suspected victims' willingness to make allegations. Younger children, males, and those who had not previously discussed the abuse were less likely to make allegations, as was the case in previous studies (Hershkowitz et al., 2005; London et al., 2005; Pipe et al.,

2007).

Most importantly, however, the study showed that interviewer behavior was associated with the likelihood that children would make valid allegations. A prior study (Hershkowitz et al., 2013) showed that, during the rapport-building phase, interviewers provided children with higher levels of non-suggestive support in the RP than in the SP condition. Interviewers using the RP established better rapport, rendering the children less reluctant, more cooperative, and more willing to describe their experiences. In line with previous research (Langer, McLeod, & Weisz, 2011), Hershkowitz et al. showed that interview protocols can help interviewers create better rapport with children. Accordingly, use of the RP was expected to increase the willingness of reluctant victims to make allegations of abuse. As expected, the children (for all of whom there was independent corroborative evidence of abuse) were significantly more likely to make (valid) allegations when the RP rather than the SP was used, presumably because the RP had successfully altered interview dynamics. Moreover, the superiority of the RP was still evident after we controlled for other factors, including individual differences among interviewers, that might affect the likelihood that children would make allegations of abuse.

Better rapport building and the provision of emotional support seemed to have enhanced the children's motivation and engagement with their interviewers. As other researchers have suggested (Almerigogna et al., 2007; Bottoms, Quas & Davis, 2007; Quas & Lench, 2007), a supportive environment helps to reduce children's anxiety, while increasing their confidence and sense of self efficacy, thereby enhancing their informativeness. Although these socio-emotional factors have already been identified as powerful influences on the behavior and informativeness of non-reluctant children in forensic settings

(Hershkowitz, 2009), their importance in the context of forensic interviews with reluctant children is revealing.

Interactive effects were absent in these data, suggesting that the RP was equally effective when interviewing various sub-groups of children. The RP was thus superior to the SP when used to motivate children who were more susceptible to family pressure, including, boys and those who had not reported abuse prior to the investigation. These findings are noteworthy because these subgroups of children are typically least likely to make allegations when interviewed (Ghetti & Goodman, 2001; Gries et al., 1996; Hershkowitz et al., 2009; Levesque, 1994) and may be more susceptible to pressure from familial adults on whom they are dependent (Malloy et al., 2007). Thus, use of the RP appeared to have successfully motivated children known to be particularly reluctant to reveal their victimization. However, it is also possible that interactive effects were not observed because there was insufficient statistical power to assess the effects of, for example, type of abuse.

#### The veracity of the allegations

The increase in allegation rates following use of the RP inevitably raises concerns about the veracity and validity of those allegations. Much research has focused on the risks that children may make false allegations, especially when they are offered potentially suggestive support (Ceci & Bruck, 1995; Lyon et al., 2008). Even though this was a field study, we had a large enough sample that we were able to restrict our analyses to cases in which there was clear, corroborative, independent evidence that the children had indeed been abused as they alleged, thus documenting that the supportive but non-suggestive practices embedded in the RP helped abused children make valid allegations of abuse. The risk of suggestive contamination was also contained because the RP (like the SP) involved carefully structured prompts designed to evoke free recall (see a detailed description in the

method section). Previous analyses of child-interviewer interactions in RP and SP interviews showed that the RP did not involve use of such inappropriate practices as leading or suggestive prompts (Hershkowitz et al., 2013). Instead, the interviewers in the RP condition built better rapport and provided children with higher levels of non-suggestive support. Supportive interviewer behavior has also been shown to increase resistance to misinformation and to enhance accuracy in experimental contexts (Almerigogna et al., 2007; Bottoms et al., 2007). Interestingly, furthermore, the RP [was associated](#) here with an increase in the rates of allegation by the oldest children rather than the younger children who tend to be more susceptible to suggestion.

In sum, this study revealed important associations between interview practices and children's motivation to make allegations of abuse. Although the association between Protocol type and allegation rate varied in strength depending on individual and case characteristics, emerging differences were always in the same direction, with use of the RP always associated with more allegations than use of the SP. By creating more meaningful rapport with children and providing them with emotional support throughout the interview, it is likely that forensic interviewers using the RP better helped children overcome their reluctance to communicate. Best practice recommendations clearly need to underscore the importance of supportive yet non-suggestive practices when investigating possible occurrences of abuse and of using structured protocols for shaping relationships with children effectively (Langer, McLeod, & Weisz, 2011).

Some limitations need to be acknowledged, of course. First, the supportive interventions included in the RP were tested as a whole, so we cannot elucidate the relative effectiveness of individual techniques. Some techniques may have had little or no effect. Second, this study involved a quasi-experimental (pre-post) design that is

vulnerable to selection bias. In our study, there were no group differences with respect to individual characteristics of the children we studied ([age, gender, type of abuse, relationship to suspect, or prior disclosure](#)), however, and this helps rule out selection bias as a threat to the study's conclusions. Moreover, focusing exclusively on corroborated cases made the Protocol groups even more comparable, therefore enhancing the validity of the study, while permitting a strong test of the extent to which use of the RP was associated with increased rates of valid allegations. Thus, although the research design was not fully experimental, steps were taken to recognize and attenuate its weaknesses, and the study represents an important step towards understanding the potential benefits of the RP.

Because this was a field study, we could only compare allegation rates in periods of time during which different interview procedures were employed. Generalized effects of interviewer experience appear unlikely to explain the findings reported here, however, because, as reported previously, the interviewers' behavior in the two types of interviews differed only with respect to supportiveness (Hershkowitz et al., 2013). Of course, replication of the findings using other designs, including laboratory analogue procedures, would be valuable, but the results provide promising evidence that supportive interviewing may be a valuable component of developmentally appropriate interview practices, especially when the children concerned are suspected victims of intra-familial abuse.

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*Table 1. Allegation rates using the Standard and Revised Protocols*

		SP		RP		Total	
		%	<i>n</i>	%	<i>n</i>	%	<i>N</i>
Age group	<i>4-6</i>	44.1	34	47.8	46	46.3	80
	<i>7-13</i>	51.9	131	62.3	215	58.4	346
Gender	<i>Male</i>	41.1	90	54.9	142	49.6	232
	<i>Female</i>	61.3	70	65.5	124	63.9	194
Relation to suspect	<i>Biological Parent</i>	49.7	166	59.3	209	55.7	375
	<i>Other</i>	51.7	21	63.6	30	58.8	51
Previous reporting	<i>Yes</i>	63.6	55	75.6	90	71	145
	<i>No</i>	43.6	110	51.5	171	48.4	281
Abuse type	<i>Sexual</i>	33.3	6	50	12	44.4	18
	<i>Physical</i>	50.9	177	60.2	231	56.6	408
	<i>Total</i>	50.3	165	59.8	261	100%	426

*Table 2. Spearman correlations among the study variables*

	Age	Gender	Relation to suspect	Previous reporting	Abuse type	Protocol version	Allegation
Age	1	.007	-.045	-.104*	.078	-.037	-.095*
Gender		1	.098	.000	.089*	.001	.144**
Relation to suspect			1	.051	-.426**	.019	-.020
Previous reporting				1	.077	.012	.216**
Abuse type					1	.023	.049
Protocol version						1	.093*
allegation							1

\*  $p < .05$ ; \*\*  $p < .01$

*Table 3. A HLM model for the prediction of allegation rates in the whole sample (N=426)*

<i>Model terms</i>	<i>Coefficient</i>	<i>Std. Error</i>	<i>t</i>	<i>Sig.</i>	<i>Exp(Coefficient)</i>
Intercept	-1.932	2.024	-9.055	.340	0.145
Age	0.049	0.041	1.209	.227	1.050
Gender	0.621	0.209	2.973	.003	1.862
Relation to suspect	-0.031	0.391	-0.078	0.938	0.970
Previous reporting	0.973	0.226	4.299	<a href="#">.001</a>	2.645
Abuse type	-0.519	0.524	-0.989	.323	0.395
Protocol version	0.450	0.214	2.104	.036	1.568

Std. Error= Standard error; Sig.= Significance; *Exp(Coefficient)*= Exponent(Coefficient)