

Is interviewer support associated with the reduced reluctance and enhanced informativeness of alleged child abuse victims?

Uri Blasbalg¹, uriblasbalg@gmail.com

Irit Hershkowitz², irith@research.haifa.ac.il

Michael. E. Lamb¹, mel37@cam.ac.uk

Yael Karni-Visel¹, yaelvisel@gmail.com

Elizabeth C. Ahern¹, ecahern@gmail.com

To appear in: Law, and Human Behavior

¹ Department of Psychology, University of Cambridge, U.K.

² School of Social Work, University of Haifa, Israel.

Authors' Note

The research project was supported by grants from the Nuffield and Jacobs Foundations. Uri Blasbalg's work on this paper was supported by the Haruv Institute.

Correspondence should be addressed to Uri Blasbalg, Department of Psychology, University of Cambridge, Free School Lane, Cambridge, CB2 CRQ, United Kingdom. Email: uriblasbalg@gmail.com.

Abstract

Child maltreatment victims are often reluctant to report abuse when formally interviewed. Evidence-based guidelines like the National Institute of Child Health and Human Development (NICHD) Standard Investigative Interview Protocol do not adequately address such reluctance because they are focused on cognitive rather than socio-emotional strategies. The present study was designed to determine whether the Revised NICHD Protocol, which emphasizes supportive interviewing more than the Standard Protocol does, might predict increases in the overall informativeness and reductions in the reluctance of alleged victims. A total of 254 interviews, 166 using the Revised Protocol and 88 using the Standard Protocol, were conducted with 4.06- to 13.98-year-old children ($M = 9.20$, $SD = 2.49$) who disclosed multiple incidents of physical abuse by their parents and were thus expected to be more reluctant than victims of extrafamilial abuse. We coded indices of interviewer support and question types, children's reluctance, and informativeness in each utterance during the substantive phases of the interviews. The Revised Protocol was associated with better interviewer support and questioning as well as reduced reluctance and increased informativeness on the part of the children. These findings document the value of training interviewers to attend to the socio-emotional needs of suspected abuse victims during investigative interviews.

Keywords: Investigative interviewing; Revised NICHD Protocol; support; reluctance

Public significance:

The study documented the value of providing emotional support when conducting investigative interviews of suspected child abuse victims. The results showed that, compared to the Standard NICHD Protocol, the Revised Protocol was associated with reduced reluctance and increased informativeness on the part of alleged victims during forensic interviews. These results suggest that supportive interviewing may meet interrogated children's emotional needs, thereby increasing the likelihood that they and their families might benefit from appropriate interventions. The findings also emphasize that interviewers might need advanced training to help them acquire the relevant skills.

Children are less likely to report intrafamilial abuse than abuse perpetrated by non-family members (e.g., Hershkowitz, Horowitz, & Lamb, 2005; Hershkowitz, Lamb, & Katz, 2014; Ussher & Dewberry, 1995; Wyatt & Newcomb, 1990) and when children are reluctant to disclose abuse, it may compromise the quality of their testimony (Hershkowitz, Lamb, Katz, & Malloy, 2013; Lewy, Cyr, & Dion, 2015) and reduce the ability of child protection and criminal justice agencies to intervene effectively (Cross & Hershkowitz, 2017; Paine & Hansen, 2002). Unfortunately, most evidence-based interview guidelines such as the NICHD Investigative Interview Protocol (Orbach et al., 2000; see details below) have focused on cognitive strategies designed to enhance the quality of testimony without adequately addressing the socio-emotional concerns that inhibit reluctant children (Hershkowitz, Orbach, Lamb, Sternberg, & Horowitz, 2006; Lewy et al., 2015; Teoh & Lamb, 2013). The Revised NICHD Protocol was designed to address this gap by showing interviewers how they could address children's reluctance and enhance their cooperativeness non-suggestively (Hershkowitz et al., 2013). The current study was designed to determine whether children interviewed using the Revised Protocol were less reluctant and more informative than children interviewed using the Standard Protocol.

Reluctant Children and Interviewer Behavior

Prior research has shown that children are especially reluctant to disclose abuse by family members, with as many as half the suspected victims not making accusations of abuse when questioned formally (e.g., Goodman-Brown, Edelstein, Goodman, Jones, & Gordon, 2003; Hershkowitz et al., 2005; Hershkowitz, Lamb, & Katz, 2014). To understand the dynamics of forensic interviews with uncooperative suspected victims, Hershkowitz et al. (2006) examined the pre-substantive parts of 100 interviews with children whose allegations of abuse had been independently verified; half of the children disclosed whereas the others did not. The study showed that specific expressions of omission (e.g., 'I don't know' or 'I

don't remember') early in the interviews (before the topic of abuse was broached) predicted the failure to disclose abuse during the substantive parts of the interviews. Of course, such omissions could reveal a real inability rather than an unwillingness to provide information, although, in a later study of courtroom testimony in Scotland, Andrews, Ahern, and Lamb (2017) showed that such expressions most commonly occurred while children were offering some information while withholding other details. Furthermore, Hershkowitz et al.'s (2013) study showed that denials, resistances, and omissions were negatively correlated with the overall level of children's forensic informativeness. Together, these findings suggested that many omissions are manifestations of reluctance, rather than only expressions of true ignorance.

In addition to examining the behavior of uncooperative children, Hershkowitz and her associates (2006) examined the interviewers' demeanor when they encountered reluctance. They found that interviewers responded to reluctance by being less rather than more supportive: They asked more intrusive questions, were unsupportive, and tended to ask questions about the suspected abuse prematurely. Lewy (2014) and Teoh and Lamb (2013) observed similar counter-productive patterns. These researchers all concluded that the interviewers' counter-productive responses in the face of reluctance might have aggravated the children's reluctance and lack of cooperation. They suggested that, when first noticing signs of reluctance, interviewers should provide more rather than less support so as to prevent the destructive dynamics from unfolding.

Supportive behavior during an interview involves "a form of social interaction or communication that fosters a feeling of well-being in the target" (Davis & Bottoms, 2002; p. 186). Studies of non-reluctant children were the first to show the beneficial effects of support on cognitive performance and interview outcomes when interviewers were warm and friendly, smiled, maintained eye contact, adopted open postures, and expressed interest in

what the children said (e.g., Davis & Bottoms, 2002; Quas, Bauer, & Boyce, 2004). Further studies (for a meta-analysis, see Saywitz, Wells, Larson, & Hobbs, 2016) established that supportive interviews predicted more rather than less accurate information than did neutral or non-supportive interviews, even in response to suggestive questions. At least in these analog studies, however, supportive behavior was not associated with increases in the total amount of information provided, perhaps because the participants in such studies were highly motivated to be cooperative regardless of variations in the interviewers' behavior.

In field studies, interviewer support has been operationalized by tabulating the frequency of comments expressing interest in the child, praising the child's efforts, recognizing expressions of reluctance or emotion, and demonstrating the interviewer's trustworthiness and professionalism (e.g. "I talk to children every day, and they tell me about things that have happened to them"). Three field studies (Hershkowitz, 2009; Ruddock, 2006; Teoh & Lamb, 2013) have shown that interviewer supportiveness was positively correlated with the informativeness of young witnesses, while Lewy et al. (2015) found an association between unsupportiveness and impaired informativeness. Two of these studies (Hershkowitz, 2009; Teoh & Lamb, 2013) also showed a positive correlation between enhanced support and the informativeness of less cooperative children. In all, both in the laboratory and in the field, support has been associated with enhanced performance by young interviewees, whether or not they were reluctant to cooperate. More recently, field studies have been conducted to explore correlations between measures of support and reluctant children's performance during forensic interviews conducted using the Revised NICHD Protocol.

The Standard and Revised NICHD Investigative Interview Protocols

The Standard NICHD Protocol (Lamb, Hershkowitz, Orbach, & Esplin, 2008) is fully structured, covering all phases of investigative interviews, mostly focused on children's cognitive capacities. Protocol interviews open with a pre-substantive phase in which

interviewers first prepare child-witnesses for their role as informants by explaining the ‘ground rules’ for the interview, then try to establish rapport, and finally entrain narrative response styles by exploring positively experienced events. Thereafter, in the transitional phase, interviewers switch focus to substantive issues (the possibility that abuse occurred), using a structured series of increasingly focused, non-suggestive prompts when ‘free-recall’ prompts fail to elicit a disclosure. If the child makes an allegation, the interviewer seeks further information, primarily by using open-ended invitations, during the substantive phase. The Standard Protocol encourages interviewers to exhaustively probe children’s memory using free-recall prompts before asking directive questions, with few option-posing questions asked only when necessary to elicit critical information. The present study focused only on the last two (transitional and substantive) phases of investigative interviews.

Hershkowitz and her colleagues (2013) revised the Standard Protocol to guide investigators to conduct interviews more supportively. The Revised NICHD Protocol included adjustments that emphasize rapport building (Hershkowitz, 2011), identification of signs of reluctance, and the provision of supportive comments. First, to promote children’s emotional comfort, trust, and cooperation, rapport building precedes (rather than follows) explanation of the ground rules. Also, interviewers are encouraged to offer welcoming greetings and to express interest in the children early the interview (“I’m interested in getting to know you”). Second, the Protocol showed interviewers how to identify expressions of reluctance and emotion made by the child and to answer them using non-suggestive supportive comments (see examples below). Third, the guide offered an inventory of non-suggestive yet supportive comments of several types: Expressions designed to promote rapport with the child (“Good to meet you,” “I want to know you better,” “Would you like a glass of water?”), emphasis on the interviewer as a trustworthy professional (“I am here to listen to you,” “My job is to speak with children”), positive reinforcements of the child’s

effort (“You are being very clear,” “Thank you for sharing with me”), expressions of emotional support (echoing/ acknowledging/ exploring children’s feelings and anxieties: “You say you feel embarrassed to talk about that; please tell me what you mean”) and encouragement (“It’s important that you tell me everything you remember as well as you can”).

The Revised Protocol was first pilot-tested in a study involving seven professional investigators from the Israeli Child Investigative Service who were experienced users of the Standard NICHD Protocol and were then trained to use the more supportive Revised Protocol. An examination of their interviews showed that, in the pre-substantive parts of Revised Protocol interviews, interviewers offered reluctant children more supportive and fewer unsupportive comments; in turn, the children expressed less reluctance and gave more responsive answers than did children interviewed using the Standard Protocol (Hershkowitz et al., 2013). In another study, using a sequential analysis, Ahern, Hershkowitz, Lamb, Blasbalg, and Winstanley (2014) then found that reactive support (support offered immediately in response to expressions of reluctance), seldom occurred in either Standard or Revised Protocol interviews but was positively associated with more cooperative behavior when interviewers offered it. Enhanced support in the pre-substantive phase was also positively correlated with the rates of valid disclosures: Hershkowitz, Lamb, and Katz (2014) showed that rates of disclosure of independently-verified abuse were 18% higher when the Revised Protocol rather than the Standard Protocol was used. However, more support was not provided in the transitional and substantive phases of Revised Protocol than of Standard Protocol interviews in this pilot study, so it was not possible to determine whether supportive interviewing was associated with the provision of richer and more informative reports.

Based on the encouraging results of the pilot study, the Israeli Child Investigation Service decided to implement use of the Revised Protocol throughout the country. An

extensive 2-year-long training program was then held for all child investigators in the Service (Hershkowitz et al., 2017). The Revised Protocol was further revised to encourage the provision of non-suggestive support in all phases of the forensic interview, with emphasis on the provision of reactive support — support offered immediately after expressions of reluctance. An assessment of the interviewers' post-training skills (Hershkowitz et al., 2017) revealed that the principal goals were achieved: Interviewers provided more support in both the transitional and substantive phases (see the Method section) of Revised Protocol than Standard Protocol interviews, and the levels of reactive support were significantly higher.

In another post-implementation study, Ahern, Hershkowitz, Lamb, Blasbalg, and Karni-Visel (2017) compared 116 Standard Protocol interviews with 114 Revised Protocol interviews conducted after the interviewers had attended two or more training sessions but found no differences in children's responses during the substantive phase. In the transitional phase (i.e., while interviewers were trying to determine whether the children would make allegations), however, disclosures were made following fewer prompts, indicating that the interviewers had been able to avoid using the most intrusive or leading prompts. These results suggested that children in the Revised Protocol condition were less reluctant than comparable children interviewed using the Standard Protocol.

Further studies of Revised Protocol interviews showed that supportive utterances indeed preceded declines in reluctance, which in turn, mediated the association between support and the increased production of forensically relevant information (Blasbalg, Hershkowitz, & Karni-Visel, in press) as well as more coherent narratives (Blasbalg, Hershkowitz, Karni-Visel, & Lamb, 2018). In addition, Karni-Visel, Hershkowitz, Blasbalg, and Lamb (2018) reported that supportive utterances predicted children's expressions of emotion and that emotional expression fully mediated the association between support and the increased production of forensically relevant information.

Together, several studies have thus documented the advantages of using the Revised Protocol. However, no previous study has directly sought to measure the associations between supportive interviewing strategies within Revised Protocol interviews and the overall levels of reluctance and forensic informativeness during the transitional and substantive phases.

The Present Study

Previous studies have found an association between use of the Revised Protocol and children's improved cooperativeness in the pre-substantive and transitional phases, as well as reduced reluctance and enhanced informativeness at the utterance level during the substantive phase (Blasbalg et al., in press). However, no study has shown that use of the Revised Protocol is associated with reductions in overall levels of reluctance or increases in overall levels of informativeness in the transitional and substantive phases, during which abusive contents are explored. Accordingly, these issues were the focus of the present research. We hypothesized that, during the transitional and substantive phases, interviewers using the Revised Protocol would provide more support than interviewers using the Standard Protocol. Additionally, we expected that, in both the transitional and substantive phases, children interviewed using the Revised Protocol would show less reluctance than children interviewed using the Standard Protocol. Because the Revised Protocol was expected to alleviate children's reluctance, we further expected that interviewers using it would ask more open-ended questions and fewer closed-ended questions than interviewers implementing the Standard Protocol. Further, we predicted that children would provide more forensically relevant information and be more responsive in the substantive phase of Revised rather than Standard Protocol interviews.

Method

Sample

Investigators from the Israeli Ministry of Welfare and Social Services, which approved the study, interviewed 254 children (42% girls), aged 4.06 to 13.98 years ($M = 9.20$, $SD = 2.49$), who disclosed multiple incidents of physical abuse by their parents. Eighty-eight children (27 girls) averaging 8.87 years ($SD = 2.81$) of age were interviewed using the Standard Protocol during a 18-month-long period (January 2013 – June 2014), while 166 (80 girls) whose average age was 9.38 years ($SD = 2.37$) were interviewed using the Revised Protocol during a subsequent 19-month-long period (August 2014 – February 2016).

Among these interviews, the transitional phases of 58 (66%) were previously analyzed (Ahern et al., 2017) with respect to the types of questions asked by interviewers and their provision of support. Blasbalg et al. (in press) included in their sample 149 (90%) Revised Protocol interviews from the current sample, and studied associations at the utterance level among support, reluctance, and informativeness during the substantive phases. All the Revised Protocol interviews in the current study were also included in Karni-Visel et al.'s (2018) study, which examined associations at the utterance level among support, emotional expressiveness, and informativeness during the substantive phases.

All interviews were conducted by interviewers who had been extensively trained to use the Standard NICHD Protocol and were very experienced forensic interviewers, regularly conducting hundreds of them every year. Revised Protocol interviews were conducted by investigators who were given further intensive training in use of this Protocol, which emphasized supportive interviewing (Hershkowitz et al., 2017). All cases were deemed valid (i.e., to involve substantiated physical abuse) based on evidence independent of the allegations made during the forensic interviews (65% by eyewitnesses, 15% by documented wounds and bruises, 1% by medical reports, 5% by suspect admissions, and 15% by prior disclosures to professionals).

Data Coding

Professionals transcribed recordings of the interviews and checked their completeness and accuracy before coding using Atlas.ti software (Muhr, 1997). Coders determined whether the specific interviewer utterances and children's responses described below present or absent in each conversational turn as in Hershkowitz et al.'s (2006) study. We accounted for the following categories of support: expressions designed to promote rapport with the child, emphasis on the interviewer's trustworthiness, positive reinforcements of the child's efforts, and expressions of emotional support and encouragement.

We recorded the presence or absence of each type of reluctance in each child utterance. Reluctance was coded whenever there were omissions (no answer, "nothing to say," "don't know," "don't remember," "not sure"), expressions of resistance ("I don't want to tell you," "I'll answer only this last question"), or denials ("It didn't happen," "I didn't say that"), regardless of whether the turn was responsive or informative (see below). We sought to minimize the misidentification of reluctance by not coding omissions as reluctance when the child was referring to others' thoughts or feelings ("why did he do it?" – "I don't know") or to temporal information ("when was it?" – "I don't remember"). In the transitional phase, the proportion of utterances containing omissions was positively and significantly correlated with the proportion of utterances containing expressions of resistance ($r = 0.14, p = 0.03$) whereas the correlations between the proportion of utterances containing denials and either omissions or expressions of resistance were not significant ($r = -0.07, p = 0.28$; $r = -0.03, p = 0.69$, respectively). In the substantive phase, there was a positive association between the proportion of utterances containing omissions and the proportion of utterances containing expressions of either resistance or denial ($r = 0.14, p = 0.02$; $r = 0.20, p < 0.01$, respectively). There was no significant correlation between the proportion of utterances containing resistance and the proportion of utterances containing denials ($r = 0.01, p = 0.82$).

We also coded each child utterance as either 'responsive' -- i.e., included any

forensically relevant information, whether new or repeated -- or not. When the children were responsive, we further noted whether the utterances were either 'informative' -- i.e., included new forensically relevant information (Lamb et al., 1996; Yuille & Cutshall, 1986) — or not. We coded whether or not interviewer utterances asked about possible abuse and, when they did, classified them as either open-ended (invitations) or closed-ended (directives, option-posing, and suggestive prompts as defined by Lamb et al., 2018).

We quantified the lengths of each of the interview phases by counting the total number of interviewer-child conversational turns.

Inter-rater reliability

Four raters who first established inter-rater reliability on a separate set of transcripts coded the transcripts. To ensure the maintenance of high levels of reliability throughout coding, all coders coded 20% of the transcripts. Coders were blind to the research hypotheses. *K alpha* inter-rater index (Hayes & Krippendorff, 2007) coefficients for support, question types, reluctance, informativeness, and responsiveness were 0.80, 0.81, 0.80, 0.84, and 0.78, respectively.

Results

To assess the associations among the type of interview protocol, the quality of interviewing, and children's reluctance and productiveness, analyses compared interviews in the Revised and Standard Protocol conditions. For both the transitional and substantive phases, analyses first focused on the interviewers' supportiveness and questioning as well as the children's reluctance; analyses of the substantive phase also examined the children's informativeness and responsiveness. We also explored and have reported (where relevant) all the possible interactions between the covariates and independent variables. In all tests relating to the transitional phase and for several relating to the substantive phase, the inclusion of interactions did not yield significantly better fits. For one outcome variable --

supportiveness in the substantive phase -- modelling the Protocol by Gender interaction resulted in a better fit, and so we report that model.

Generalized Linear Mixed-effects Models (GLMM) tested hypotheses for dichotomous outcome variables (in this case, the presence or absence of the target characteristics in each turn) with subjects modeled as random effects (random intercept model) to account for non-modeled child factors. The Mixed-effects approach was selected for analyses of the current data because it can deal with nested (Hayes, 2006), and unbalanced (varying numbers of turns per interview) data (Heck, Thomas, & Tabata, 2013). The “glmer” function from the R package *lme4* with the bobyqa optimizer was employed to test multilevel models (Bates, Mächler, Bolker, & Walker, 2015), with a logit function to address the dichotomous nature of the outcome variables.

Preliminary Generalized Linear Model (GLMM) tests determined whether the groups differed with respect to the child’s age, gender, or the severity of abuse. The groups differed only concerning gender ($p < 0.001$), so this factor alone was controlled in the analyses reported below. The overall numbers of turns in each phase were also controlled for in each of the tests to account for the varying interview lengths.

Outlier detection analyses (using an IQR of 2.2; Hoaglin & Iglewicz, 1987) revealed three outliers on the measure of support in the substantive phase of Standard Protocol interviews. Inclusion of these cases violated the linearity assumption of the GLMM analysis, so they were omitted from the analyses. Further, we found seven outliers on the number of utterances variable (four Standard; three Revised Protocol) in the transitional phase, and one in the substantive phase. Because further diagnostic examinations (Bolker et al., 2009; Florian, 2018) indicated that these eight cases could be included without violating the assumptions necessary for conducting GLMM analyses we report analyses that include them while summarizing in footnotes the effects of their exclusion.

All descriptive statistics are reported as proportions of the overall number of utterances in the relevant phase. This allowed us to accurately portray the relative prominence of the various interviewer interventions and children's responses.

The Transitional Phase

230 interviews (76 Standard, 154 Revised Protocol) included transitional phases. The transitional phases averaged 15.22 interviewer-child exchanges ($SD = 16.66$) in the Standard Protocol condition and 14.32 ($SD = 12.14$) exchanges in the Revised Protocol condition.

Supportive comments.

In the Revised Protocol condition, interviewers made supportive comments in 0.48 of their utterances ($SD = 0.25$), while they did so in 0.35 ($SD = 0.26$) of the turns in the Standard Protocol condition. GLMM analyses controlling for the child's gender and the number of turns in the transitional phase revealed that interviewers offered supportive comments more often in Revised Protocol than in Standard Protocol interviews, ($\beta = 0.64$, $SE = 0.13$, $z = 4.94$, $p < 0.001$). The length of the transitional phase was also significantly associated with fewer supportive comments offered when the phase was longer ($\beta = -1.57$, $SE = 0.38$, $z = -4.14$, $p < 0.001$; see Table 1).

Expressions of reluctance.

Children expressed reluctance in about a quarter ($M = 0.24$, $SD = 0.19$) of the turns in the Revised Protocol condition compared to a third of the turns ($M = 0.30$, $SD = 0.24$) in the Standard Protocol condition. Children expressed less reluctance in Revised Protocol interviews than in Standard Protocol interviews ($\beta = -0.36$, $SE = 0.14$, $z = -2.61$, $p = 0.01$; See Table 2).

Style of questioning.

Interviewers asked questions in 0.51 of their turns ($SD = 0.25$) in the Revised and in 0.62 ($SD = 0.26$) of their turns in the Standard Protocol condition. Fewer forensically relevant

questions were asked during the transitional phase in Revised than in Standard Protocol interviews ($\beta = -0.54$, $SE = 0.11$, $z = -5.00$, $p < 0.001$). The overall number of turns was also a significant predictor; fewer questions were asked if the transitional phase was longer ($\beta = -3.85$, $SE = 0.33$, $z = -11.77$, $p < 0.001$).

In both the Revised Protocol and Standard Protocol interviews, open-ended forensically relevant prompts comprised a third of the turns ($M = 0.33$, $SD = 0.29$; $M = 0.33$, $SD = 0.29$, respectively), whereas closed-ended questions comprised 0.19 ($SD = 0.16$) and 0.28 ($SD = 0.22$) of the interviewers' utterances, respectively. The use of open-ended questions in the two Protocol conditions did not significantly differ but the number of such questions decreased as the number of turns increased ($\beta = -5.66$, $SE = 0.42$, $z = -13.34$, $p < 0.001$). In the Revised Protocol condition, interviewers asked significantly fewer closed-ended forensically relevant questions than in the Standard Protocol ($\beta = -0.55$, $SE = 0.14$, $z = -3.98$, $p < 0.001$). Again, the overall number of turns was also significantly predictive ($\beta = -0.97$, $SE = 0.43$, $z = -2.25$, $p = 0.02$), suggesting that fewer closed-ended questions were asked when the transitional phase was longer.¹

The Substantive phase

All 251 interviews in the sample included substantive phases. On average, the substantive phases included 93.35 interviewer-child exchanges or turns ($SD = 58.01$) in Standard Protocol interviews and 85.39 turns ($SD = 48.01$) in Revised Protocol interviews.

Supportive comments.

Supportive comments were included in 0.15 ($SD = 0.10$) and 0.08 ($SD = 0.06$) of the prompts in the Revised and Standard Protocol conditions, respectively. GLMM tests showed higher levels of support in Revised Protocol than in Standard Protocol interviews ($\beta = 0.43$,

¹ Excluding eight cases because their scores on the number of turns variable were outliers resulted in a model in which that variable was not significantly predictive ($p = 0.65$). The statistical significance of all other predictors was unaffected.

$SE = 0.13$, $z = 3.30$, $p < 0.001$; see Table 3). Gender did not significantly predict the provision of support, but the interaction between Protocol type and gender (girls) did ($\beta = 0.44$, $SE = 0.22$, $z = 2.03$, $p < 0.05$), implying that interviewers using the Revised Protocol were especially supportive of female interviewees. The number of turns also predicted more ($\beta = 0.19$, $SE = 0.09$, $z = 2.03$, $p = 0.042$) supportive comments in the substantive phase.²

Expressions of reluctance.

Children expressed reluctance in 0.23 ($SD = 0.12$) and 0.27 ($SD = 0.14$) of their responses in Revised and Standard Protocol interviews, respectively. GLMM test showed that children in the Revised Protocol condition were less likely to express reluctance than children in the Standard Protocol condition ($\beta = -0.20$, $SE = 0.10$, $z = -2.05$, $p = 0.04$; see Table 4). Less reluctance was also expressed when the substantive phase included more turns ($\beta = -0.28$, $SE = 0.09$, $z = -3.14$, $p < 0.01$).³

Style of questioning.

Interviewers asked forensically relevant questions in 0.78 ($SD = 0.15$) of the substantive utterances in the Revised Protocol condition and 0.75 ($SD = 0.18$) of the utterances in Standard Protocol condition. There was no difference between Protocol conditions with respect to the number of questions but substantive phases that included more turns tended to involve fewer forensically relevant questions ($\beta = -0.59$, $SE = 0.12$, $z = -5.06$, $p < 0.001$).

Open-ended questions comprised 0.43 ($SD = 0.14$) of the utterances in the Revised condition and 0.36 ($SD = 0.12$) in the Standard condition. Interviewers made closed-ended information requests in 0.36 ($SD = 0.13$) of Revised Protocol interviews exchanges, and 0.39

² The interaction and the number of turns variable did not have significant ($p = 0.09$) effects when the model was tested with the eight outliers on the number of turns variable excluded. The statistical significance of all other predictors was unaffected.

³ When the model was tested with the eight outliers on the number of turns variable excluded, the Protocol type was not significantly predictive ($p = 0.06$). The statistical significance of all other predictors was unaffected.

($SD = 0.13$) of those in Standard Protocol interviews. Controlling for child gender and the number of turns in the substantive phase, interviewers in the Revised Protocol condition asked more open-ended questions ($\beta = 0.31, SE = 0.08, z = 4.07, p < 0.001$) than in the Standard Protocol condition. Fewer closed-ended questions were asked in the Revised Protocol condition ($\beta = -0.16, SE = 0.08, z = -2.06, p = 0.04$), and when the number of turns was higher ($\beta = -0.29, SE = 0.07; z = -4.21; p < 0.001$).

Informativeness and responsiveness.

Children provided forensically relevant new details in 0.53 ($SD = 0.16$) of their responses in Revised Protocol interviews, as well as in 0.49 ($SD = 0.15$) of their responses in Standard Protocol interviews. In the Revised Protocol condition, children were significantly more likely to provide forensically relevant new details in their responses than children in the Standard Protocol condition ($\beta = 0.20, SE = 0.08, z = 2.23, p = 0.03$; see Table 5). The number of turns in the substantive phase also predicted fewer informative responses ($p = 0.001$).

Responsive answers which provided new or repeated forensically relevant details comprised 0.65 ($SD = 0.17$) and 0.60 ($SD = 0.17$) of the children's responses in Revised and Standard Protocol interviews, respectively. There were no significant condition differences in the likelihood that children would provide responsive answers, although responsive replies were less common when there were more turns in the substantive phase ($\beta = -0.21, SE = 0.10, z = -2.16, p = 0.03$).

Discussion

The present study focused on Revised Protocol forensic interviews conducted after a nationwide program in which Israeli interviewers learned how to employ supportive but non-suggestive strategies not only throughout the pre-substantive (Ahern et al., 2014) but also during the transitional and substantive phases (Ahern et al., 2017; Hershkowitz et al., 2017).

Several early observational studies (Hershkowitz et al., 2006; Lewy, 2014; Teoh & Lamb, 2013) showed that interviewers tended to react counter-productively when young interviewees displayed reluctance: questioning intrusively, offering little support, replying negatively, and prematurely discussing the possibility that abuse might have occurred. The authors of those papers suggested that interviewers should respond to reluctance with support and recommended that investigative interviewers needed to be trained carefully to behave more supportively when interviewing reluctant children. The current results, along with those obtained in other studies (Ahern et al., 2017; Hershkowitz et al., 2017) show that such training can be effective.

Less clear, until this study, was the association between support and children's responses during the transitional and substantive phases of forensic interviews. The current novel results show that, during both of these phases, children expressed less reluctance in Revised Protocol than in Standard Protocol interviews. Previously, Ahern and her colleagues (2017) had compared the transitional and substantive phases of Standard and Revised Protocol interviews (conducted by interviewers who had attended at least two Revised Protocol training sessions) but found no difference in the levels of reluctance expressed. By contrast, Blasbalg and associates (in press) analyzed a sample of Revised Protocol interviews conducted by investigators who had attended at least four Revised Protocol training sessions and found an association at the utterance level between the frequency of supportive comments in the substantive phase and declines in the children's reluctance. The current study of similarly trained interviewers is the first to report reduced levels of reluctance overall in both the transitional and substantive phases, during which reluctance might be especially intense and problematic (Andrews et al., 2017; Hershkowitz et al., 2013).

Ahern et al.'s (2017) study of less trained interviewers showed no associations between the use of the Revised Protocol and verbal reluctance or productivity whereas the

present study of more highly trained interviewers showed clearly that its use predicted declines in reluctance and increases in informativeness. Thus, these results suggest that additional training in the use of the Revised Protocol was associated not only with better-interviewing skills (Hershkowitz et al., 2017) but also with child cooperation and productivity.

In all, the main goal of the Revised Protocol, to equip interviewers with skills that are correlated with children's reduced reluctance and fuller accounts of experienced events, appears to have been accomplished. Indeed, supportive interviewing appears to predict enhanced children's forensic informativeness at the utterance level (Blasbalg et al., in press; Karni-Visel et al., 2018). The current study went beyond this by showing that more supportive interviewer behavior predicted increases in overall informativeness, underscoring the effectiveness of the Revised Protocol. Unlike previous studies documenting that the Revised Protocol was associated with more supportive behavior by interviewers (Ahern et al., 2017; Hershkowitz et al., 2013, 2017), however, the present study showed that interviewers using the Revised Protocol were especially supportive of girls. This may have been because most of the interviewers were also female (88% in the Standard and 84% in the Revised Protocol groups) or because interviewers, regardless of their own gender, believed that female complainants needed or deserved more emotional or social support. Interestingly, girls were not questioned differently and were neither more informative nor less reluctant than boys, who comprised about half (52%) of the children in the Revised Protocol condition. Further research is thus necessary before we conclude that girls and boys are consistently treated differently in Revised Protocol interviews.

The current study also showed better questioning by interviewers using the Revised Protocol in both the transitional and substantive phases of the interviews. During both phases, interviewers using the Revised Protocol asked proportionally more of the less specific and

more open questions that are known to elicit richer responses (Lamb et al., 2018). Other studies (see Lamb et al., 2007, 2018, for reviews) have shown that the more open the requests made of children, the more elaborative and accurate are their replies. The current findings also indicated that the transitional phases of Revised Protocol interviews included fewer information-seeking questions than the transitional phases of Standard Protocol interviews. These findings may imply that providing support replaced repetitive questioning of children who did not disclose the suspected abuse, reducing criticism regarding possible contamination of their subsequent accounts. Further, children who reveal their victimization more readily are known to provide more details about their experiences (Lamb et al., 2018). During the substantive phases, Revised Protocol interviews also included more open-ended and fewer closed-ended questions than Standard Protocol interviews, thereby eliciting information that is more likely to be accurate (Lamb et al., 2018).

Limitations and Suggestions for Future Research

Several limitations should be noted, however. Most importantly, the research design and the correlational nature of the analyses prevent us from concluding that enhanced support directly caused the declines in reluctance and increases in informativeness observed. Instead, the supportive interviewing style facilitated by use of the Revised Protocol may be associated with several other facilitating factors. Further, the pre-post design means that the Revised Protocol interviewers were more experienced, so experience rather than the Protocol may have explained the differences observed (see, for example, Jäckle, Lynn, Sinibaldi, & Tipping, 2011; Olson & Peytchev, 2007). We attempted to minimize this possibility by narrowing the data collection periods and focusing only on experienced interviewers so that the group differences in levels of experience were relatively small, although interviewers who conducted the Revised Protocol interviews attended an additional intensive training program

(Hershkowitz et al., 2017). It is thus possible that the additional intensive training accounted for some of the associations reported.

Although omission responses may signal either true ignorance or a reluctance to be informative, several studies have shown their association with uncooperativeness (Andrews et al., 2017; Blasbalg et al., in press; Hershkowitz et al., 2006, 2013; Lewy et al. 2015) and the tendency of such responding to decline in response to support (Ahern et al., 2014; Blasbalg et al., in press; Hershkowitz et al., 2013). Both findings suggest that omissions often reflect reluctance. A more inclusive coding of reluctance would also include non-verbal signals, which could not be coded here because we had to rely on transcripts of audio records. Such information might have allowed us to avoid the possible problems associated with our decision to code many omission responses as indices of reluctance.

The results also do not reveal whether certain types of questions provoke more reluctance than others or whether there was an association between a specific component of the Revised Protocol (e.g., enhanced rapport building, greater support during the transitional phase, and the provision of support during the substantive phase) and children's enhanced cooperation and informativeness. Furthermore, we did not determine whether some of the Revised Protocol's outcomes were inter-correlated (e.g., better questioning style to higher levels of child production). Saywitz, Larson, Hobbs, and Wells (2015) have noted the need for systematic research on the relative importance of different components of rapport building, and we too urge further research on this issue, as well as on associations between factors within and between different phases of the interview.

As in all field studies, the accuracy of the children's responses was unknown. It is possible that supportive interviewing may have enhanced children's motivation to please the interviewers by providing more information, including some details about which they were unsure (e.g., Ceci & Bruck, 1993; Underwager & Wakefield, 1990). However, the study only

included cases in which investigators were persuaded by independent evidence that the alleged abuse had taken place. Moreover, Saywitz et al.'s (2016) meta-analysis concluded that supportive interviewing predicted decreased rather than increased suggestibility, suggesting that the children we studied may have provided more accurate information when interviewed supportively. This finding, along with the careful selection of validated cases and the emphasis on open-ended questioning makes it reasonable to claim a meaningful association between support and the retrieval of valid information. Nevertheless, experimental analog studies are certainly necessary.

Including only externally validated cases may have biased the results. Evidence known to the interviewers could have motivated them to make additional efforts to obtain richer forensic statements. Future research comparing validated and non-validated cases may thus be valuable. Further, among the forms of validating information considered were pre-interview disclosures to a professional (e.g., teacher, health care professional, rabbi). Previous research suggests that such reports are associated with valid disclosures (London, Bruck, Ceci, & Shuman, 2007), but such validation does not involve evidence as distinctive as medical or eye-witness testimony (Horowitz et al., 1995).

Lastly, because we conducted the study in Israel, we cannot be sure that the results can be generalized to other cultures. The Israeli Youth Investigation Service mandated use of the Standard Protocol two decades ago so Israeli interviewers who were already skillful users of the Standard Protocol may have been more receptive to training about the Revised Protocol than peers in other countries. Although studies have shown that much of the human emotional infrastructure is universal (e.g., Ekman & Friesen, 1971), children from different cultures may provide different socio-emotional responses (e.g., Hareli, Kafetsios, & Hess, 2015), further underlining the value of conducting similar research in other cultures.

Implications for Practice and Policy

Interventions, including social support, social services, therapy, or material provisions, can have positive effects on the health and well-being of child abuse victims (e.g., Pelton, 2015) but access to these, as well as to additional child protection and social justice resources, usually requires that the children report their victimization (Cross & Hershkowitz, 2017; Paine & Hansen, 2002). The associations shown in the current study suggest that interviewer support facilitates children's reduced reluctance, allowing them to provide richer accounts of their victimization and thereby increasing the likelihood that they and their families will benefit from appropriate interventions. Furthermore, child abuse victims often experience adverse emotions during forensic interviews. They tend to assume responsibility, blame, or guilt (Lyon, & Ahern, 2011; Sjoberg & Lindblad, 2002), feel ashamed or embarrassed (Fleming, Mullen, & Bammer, 1997; Lyon, 1995), or fear adverse outcomes (Goodman-Brown et al., 2003; Malloy, Brubacher, & Lamb, 2011). The current data suggest that the use of the Revised Protocol may have helped interviewers to address children's manifestations of stress, perhaps thereby positively affecting their well-being during interviews in which they made the disclosures that allowed them to benefit later from professional intervention.

Previous research has documented that interviewers have difficulty behaving supportively when interviewing reluctant children (e.g., Hershkowitz et al., 2006) and that it is difficult to change these patterns of behavior (Hershkowitz et al., 2013, 2017). Because supportive interviewing has clear benefits, as demonstrated in this and other studies (Ahern et al., 2017; Blasbalg et al., in press, 2018; Karni-Visel et al., 2018) the needs for advanced intensive training and supervision should be recognized. Accordingly, investigative agencies should seek to implement evidence-based protocols such as the NICHD Revised Protocol even though such training is necessarily costly and intensive (Cross & Hershkowitz, 2017). Previous attempts to employ abbreviated training programs to teach interviewing skills have

largely failed (Lamb, 2016) so allocation of the more intensive resources is warranted. Also, online training processes (e.g., Pompedda, Zappala, & Santtila, 2015; Powell, Guadagno, & Benson, 2014) may make advanced interviewing skills more available to agencies and practitioners.

References

- Ahern, E. C., Hershkowitz, I., Lamb, M. E., Blasbalg, U., & Karni-Visel, Y. (2017). Examining reluctance and emotional support in forensic interviews with child victims of substantiated physical abuse. *Applied Developmental Science*, 1-12. doi:10.1080/10888691.2017.1387057
- Ahern, E. C., Hershkowitz, I., Lamb, M. E., Blasbalg, U., & Winstanley, A. (2014). Support and reluctance in the pre-substantive phase of alleged child abuse victim investigative interviews: Revised versus standard NICHD protocols. *Behavioral Sciences & the Law*, 32, 762-774. doi:10.1002/bsl.2149
- Andrews, S. J., Ahern, E. C., & Lamb, M. E. (2017). Children's uncertain responses when testifying about alleged sexual abuse in Scottish courts. *Behavioral Sciences & the Law*, 35, 204-224. doi:10.1002/bsl.2286
- Bates, D., Mächler, M., Bolker, B., Walker, S. (2015). Fitting linear mixed-effects models using lme4. *Journal of Statistical Software*, 67, 1-48. doi:10.18637/jss.v067.i01
- Blasbalg, U., Hershkowitz, I., Karni-Visel, Y. & Lamb, M. E. (in press). Support, Reluctance and Production in Child Abuse Investigations. *Psychology, Public Policy, and the Law*.
- Blasbalg, U., Hershkowitz, I., Karni-Visel, Y. & Lamb, M. E. (2018, March). *The associations among socio-emotional factors and the coherence of the statement in forensic interviews with alleged victims of intra-familial abuse*. Poster session presented at the AP-LS Annual Conference, Memphis, Tennessee.
- Bolker, B. M., Brooks, M. E., Clark, C. J., Geange, S. W., Poulsen, J. R., Stevens, M. H. H., & White, J. S. S. (2009). Generalized linear mixed models: A practical guide for ecology and evolution. *Trends in ecology & evolution*, 24, 127-135. doi:10.1016/j.tree.2008.10.008

- Davis, S. L., & Bottoms, B. L. (2002). Effects of social support on children's eyewitness reports: A test of the underlying mechanism. *Law and Human Behavior, 26*, 185-215. doi:10.1023/A:1014692009941
- Ceci, S. J., & Bruck, M. (1993). Suggestibility of the child witness: A historical review and synthesis. *Psychological Bulletin, 113*, 403–349. doi:10.1037/0033-2909.113.3.403
- Cross, T., & Hershkowitz, I. (2017). Psychology and child protection: Collaboration to promote widespread improvement in practice. *Psychology, Public Policy, and Law, 23*, 503-518. doi: 10.1037/law0000141
- Ekman, P., & Friesen, W. V. (1971). Constants across culture in the face and emotion. *Journal of Personality and Social Psychology, 17*, 124-129. doi: [10.1037/h0030377](https://doi.org/10.1037/h0030377)
- Florian H., (2018). DHARMA: residual diagnostics for hierarchical (multi-level / mixed) regression models. R package version 0.2.0. <http://florianhartig.github.io/DHARMA/>
- Goodman-Brown, T. B., Edelstein, R. S., Goodman, G. S., Jones, D. P., & Gordon, D. S. (2003). Why children tell: A model of children's disclosure of sexual abuse. *Child Abuse & Neglect, 27*, 525-540. doi:10.1016/S0145-2134(03)00037-1
- Hamilton, G., Brubacher, S. P., & Powell, M. B. (2016). Expressions of shame in investigative interviews with Australian Aboriginal children. *Child Abuse and Neglect, 51*, 64–71. doi: 10.1016/j.chiabu.2015.11.004
- Hareli, S., Kafetsios, K., & Hess, U. (2015). A cross-cultural study on emotion expression and the learning of social norms. *Frontiers in psychology, 6*, 1501. doi: [10.3389/fpsyg.2015.01501](https://doi.org/10.3389/fpsyg.2015.01501)
- Hayes, A. F. (2006). A primer on multilevel modeling. *Human Communication Research, 32*, 385–410. doi:10.1111/j.1468-2958.2006.00281.x

- Hayes, A. F., & Krippendorff, K. (2007). Answering the call for a standard reliability measure for coding data. *Communication Methods and Measures, 1*, 77-89.
doi:10.1080/19312450709336664
- Heck, R. H., Thomas, S., & Tabata, L. (2013). *Multilevel modeling of categorical outcomes using IBM SPSS*. Routledge Academic.
- Hershkowitz, I. (2009). Socioemotional factors in child abuse investigations. *Child Maltreatment, 14*, 172–181. doi:10.1177/1077559508326224
- Hershkowitz, I. (2011). Rapport-building in investigative interviews. In M. E. Lamb, D. J. LaRooy, L. C. Hershkowitz, I. Malloy, L. C. & C. Katz (Eds.). *Children's testimony: A handbook of psychological research and forensic practice* (pp. 109–128). Chichester, UK: John Wiley. doi:10.1002/9781119998495.ch6
- Hershkowitz, I., Ahern, B., Lamb, M.E, Blasbalg, U., Karni-Visel, Y & Breitman, M. (2017). Changes in interviewers' use of supportive techniques during the Revised Protocol training. *Applied Cognitive Psychology, 31*, 340-350. doi:10.1002/acp.3333
- Hershkowitz, I., Horowitz, D., & Lamb, M. E. (2005). Trends in children's disclosure of abuse in Israel: A national study. *Child Abuse and Neglect, 29*, 1203–1214.
doi:10.1016/j.chiabu.2005.04.008
- Hershkowitz, I., Horowitz, D., & Lamb, M. E. (2007). Individual and family variables associated with disclosure and nondisclosure of child abuse in Israel. In M. E. Pipe, M. E. Lamb, Y. Orbach, & A. C. Cederborg (Eds.), *Child sexual abuse: Disclosure, delay, and denial* (pp. 65-75). Mahwah, NJ: Erlbaum.
- Hershkowitz, I., Lamb, M. E., & Katz, C. (2014). Allegation rates in forensic child abuse investigations: Comparing the revised and standard NICHD protocols. *Psychology, Public Policy, and Law, 20*, 336. doi:10.1037/a0037391

- Hershkowitz, I., Lamb, M. E., Katz, C., & Malloy, L. C. (2013). Does enhanced rapport-building alter the dynamics of investigative interviews with suspected victims of intra-familial abuse? *Journal of Police and Criminal Psychology, 30*, 6-14.
doi:10.1007/s11896-013-9136-8
- Hershkowitz, I., Orbach, Y., Lamb, M. E., Sternberg, K. J., & Horowitz, D. (2006). Dynamics of forensic interviews with suspected abuse victims who do not disclose abuse. *Child Abuse & Neglect, 30*, 753-769. doi:10.1016/j.chiabu.2005.10.016
- Hoaglin, D. C., & Iglewicz, B. (1987). Fine-tuning some resistant rules for outlier labeling. *Journal of the American Statistical Association, 82*, 1147-1149.
doi:10.2307/2289392
- Horowitz, S. W., Lamb, M. E., Esplin, P. W., Boychuk, T. D., Reiter-Lavery, L., & Krispin, O. (1995). Establishing ground truth in studies of child sexual abuse. *Expert Evidence, 4*, 42-51.
- Jäckle, A., Lynn, P., Sinibaldi, J., & Tipping, S. (2011). *The effect of interviewer personality, skills and attitudes on respondent co-operation with face-to-face surveys* (No. 2011-14). ISER Working Paper Series.
- Karni-Visel, Y., Hershkowitz, I., Blasbalg, U., & Lamb, M. E. (2018, March). *The association between emotional expression and children's reports of intra-familial abuse: The facilitating role of emotional support*. Paper presented at the AP-LS Annual Conference, Memphis, Tennessee.
- Lamb, M. E. (2016). Difficulties translating research on forensic interview practices to practitioners: Finding water, leading horses, but can we get them to drink? *American Psychologist, 71*, 710. doi:10.1037/amp0000039

- Lamb, M. E., Brown, D. A., Hershkowitz, I., Orbach, Y., & Esplin, P. W. (in press). *Tell me what happened: Structured investigative interviews of child victims and witnesses*. (2nd ed.). Chichester, UK: John Wiley
- Lamb, M. E., Hershkowitz, I., Orbach, Y., & Esplin, P. W. (2008). *Tell me what happened*. Chichester, England: John Wiley.
- Lamb, M. E., Hershkowitz, I., Sternberg, K. J., Esplin, P. W., Hovav, M., Manor, T., Yudilevitch, L. (1996). Effects of investigative utterance types on Israeli children's responses. *International Journal of Behavioral Development* 19, 627–637.
doi:10.1177/016502549601900310
- Lamb, M. E., Orbach, Y., Hershkowitz, I., Esplin, P. W., & Horowitz, D. (2007). A structured forensic interview protocol improves the quality and informativeness of investigative interviews with children: A review of research using the NICHD investigative interview Protocol. *Child abuse & neglect*, 31, 1201-1231.
doi:10.1016/j.chiabu.2007.03.021
- Lev-Wiesel, R., Eisikovits, Z., First, M., Gottfried, R., & Mehlhausen, D. (2017). Prevalence of child maltreatment in Israel: A national epidemiological study. *Journal of Child & Adolescent Trauma*, 1-10. doi:10.1007/s40653-016-0118-8
- Lewy, J. (2014). *Disclosure of Child Sexual Abuse: Impact of Interviewers' Attitudes & Children's Collaboration during Forensic Interviews* (Doctoral dissertation).
- Lewy, J., Cyr, M., & Dion, J. (2015). Impact of interviewers' supportive comments and children's reluctance to cooperate during sexual abuse disclosure. *Child Abuse & Neglect*, 43, 112-122. doi:10.1016/j.chiabu.2015.03.002
- London, K., Bruck, M., Ceci, S. J., & Shuman, D. W. (2007). Disclosure of child sexual abuse: A review of the contemporary empirical literature. In M. E. Pipe, M. E. Lamb, Y. Orbach, & A. C. Cederborg (Eds.), *Child sexual abuse: Disclosure, delay, and*

denial (pp. 11-39). Mahwah, NJ: Erlbaum.

Muhr, T. (1997). *Atlas.ti*. Berlin: *Scientific Software Development*.

Olson, K., & Peytchev, A. (2007). Effect of interviewer experience on interview pace and interviewer attitudes. *Public Opinion Quarterly*, *71*, 273-286. doi:10.1093/poq/nfm007

Orbach, Y., Hershkowitz, I., Lamb, M. E., Sternberg, K. J., Esplin, P.W., & Horowitz, D. (2000). Assessing the value of structured protocols for forensic interviews of alleged child abuse victims. *Child Abuse & Neglect*, *24*, 733-752. doi:10.1016/S0145-2134(00)00137-X

Paine, M. L., & Hansen, D. J. (2002). Factors influencing children to self-disclose sexual abuse. *Clinical psychology review*, *22*, 271-295. doi:10.1016/S0272-7358(01)00091-5

Quas, J. A., Bauer, A., & Boyce, W. T. (2004). Physiological reactivity, social support, and memory in early childhood. *Child development*, *75*, 797-814. doi: 10.1111/j.1467-8624.2004.00707.x

Ruddock, A. C. (2006). *The relationship of interviewer rapport behaviors to the amount and type of disclosure from children during child abuse investigations* (Doctoral dissertation). Retrieved from ProQuest Information & Learning.

Saywitz, K. J., Larson, R. P., Hobbs, S. D., & Wells, C. R. (2015). Developing rapport with children in forensic interviews: Systematic review of experimental research. *Behavioral Sciences & the Law*, *33*, 372-389. doi:10.1002/bsl.2186

Saywitz, K. J., Wells, C. R., Larson, R. P., & Hobbs, S. D. (2016). Effects of interviewer support on children's memory and suggestibility: Systematic review and meta-analyses of experimental research. *Trauma, Violence, & Abuse*, *1-18*. doi: 10.1177/1524838016683457

Sedlak, A. J., Mettenburg, J., Basena, M., Peta, I., McPherson, K., & Greene, A. (2010).

Fourth national incidence study of child abuse and neglect (NIS-4). Washington, DC:

US Department of Health and Human Services.

Teoh, Y. S., & Lamb, M. (2013). Interviewer demeanor in forensic interviews of

children. *Psychology, Crime & Law*, 19, 145-159. doi:10.1080/1068316X.2011.614610

Underwager, R., & Wakefield, H. (1990). *The real world of child interrogations*. Springfield,

IL: Charles C. Thomas.

Ussher, J. M., & Dewberry, C. (1995). The nature and long-term effects of childhood sexual

abuse: A survey of adult women survivors in Britain. *British Journal of Clinical*

Psychology, 34, 177-192. doi: 10.1111/j.2044-8260.1995.tb01453.x

Wyatt, G., & Newcomb, M. (1990). Internal and External Mediators of Women's Sexual

Abuse in Childhood. *Journal of Consulting and Clinical Psychology*, 58, 758-767. doi:

10.1016/S0145-2134(02)00541-0

Yuille, J.C. & Cutshall, J.L. (1986). A case study of eyewitness memory of a crime. *Journal*

of Applied Psychology, 71, 291-301. doi:10.1037/0021-9010.71.2.291

Table 1. Fixed effect estimates for a multi-level model of support in the transitional phase

	β	95% CI	<i>SE</i>	<i>z</i> value	<i>p</i>
Intercept	-0.77	-0.99, -0.55	0.14	-5.72	<0.001
Group	0.64	0.42, 0.85	0.13	4.94	<0.001
Gender	0.16	-0.04, 0.36	0.12	1.29	0.20
Total number of turns	-1.57	-2.21, -0.95	0.38	-4.14	<0.001

Table 2. Fixed effect estimates for a multi-level model of reluctance in the transitional phase

	β	95% CI	<i>SE</i>	<i>z</i> value	<i>p</i>
Intercept	-0.88	-1.12, -0.64	0.15	-6.01	<0.001
Group	-0.36	-0.59, -0.13	0.14	-2.61	0.01
Gender	0.01	-0.21, 0.24	0.13	0.11	0.91
Total number of turns	0.21	-0.46, 0.90	0.41	0.51	0.61

Table 3. Fixed effect estimates for a multi-level model of support in the substantive phase

	β	95% CI	<i>SE</i>	<i>z</i> value	<i>p</i>
Intercept	-2.67	-2.91, -2.44	0.14	-18.94	<0.001
Group	0.43	0.21, 0.65	0.13	3.30	0.001
Gender	-0.05	-0.36, 0.26	0.19	-0.28	0.78
Total number of turns	0.19	0.03, 0.34	0.09	1.99	<0.05
Group * Gender	0.45	0.08, 0.81	0.22	2.03	0.04

Table 4. Fixed effect estimates for a multi-level model of expressions of reluctance in the substantive phase

	β	95% CI	<i>SE</i>	<i>z</i> value	<i>p</i>
Intercept	-0.87	-1.07, -0.67	0.12	-7.16	<0.001
Group	-0.20	-0.37, -0.04	0.10	-2.06	0.04
Gender	0.03	-0.12, 0.19	0.10	0.35	0.72
Total number of turns	-0.28	-0.43, -0.13	0.09	-3.14	<0.01

Table 5. Fixed effect estimates for a multi-level model of responses providing new forensically relevant details

	β	95% CI	<i>SE</i>	<i>z</i> value	<i>p</i>
Intercept	0.21	0.02, 0.39	0.11	1.87	0.06
Group	0.20	0.05, 0.35	0.09	2.23	0.02
Gender	-0.07	-0.21, 0.07	0.09	-0.81	0.42
Total number of turns	-0.27	-0.40, -0.14	0.08	-3.33	<0.01