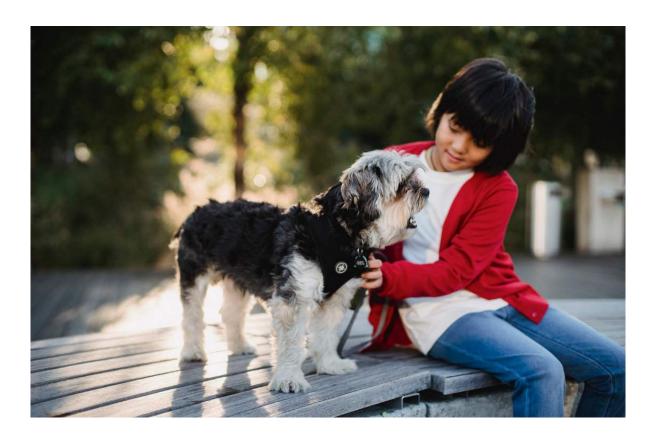iIIRG

How Facility Dogs Impact Interviewer's Questions and Details Provided by Children in Forensic Interviews

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ABSTRACT

To date, no study has examined whether the presence of a facility dog during forensic interviews assists children in sharing their abuse accounts, without altering the non-suggestive behaviors desired by the investigators and children. This study's purpose was to compare 92 forensic interviews conducted by the same investigators, with and without a facility dog, by examining whether in the presence of a dog: 1) children provided more details about the alleged events, and 2) interviewers continued to adhere to the protocol and use non-suggestive questions. These interviews were conducted by 14 investigators, using the NICHD protocol, with children aged between 4 and 15 years who were suspected of being sexually or physically abused. A generalized linear mixed model analysis revealed that a facility dog's presence showed no significant effect on the proportion of details in the interview's transition and substantive phases. No significant difference was observed between the two groups on three of the four scales of the protocol adherence and no significant difference was found on questions asked during the interview. Overall, this study's results did not support the hypothesis that the presence of a dog facilitates children's accounts. These findings should be replicated through interviews conducted using different types of interview protocols.

Key Words: Investigative interviews, facility dogs, children, details, questions

Introduction

Conducting forensic interviews with children can be challenging, as nearly 30% of children do not disclose an alleged abusive episode during interviews (Hershkowitz & Lamb, 2020; London et al., 2007). Research has identified several relational and motivational factors that prevent disclosure (Alaggia et al., 2017; Cyr, 2022; Manay & Collin-Vézina, 2021). Various strategies have been used to facilitate disclosure by children during forensic interviews, including anatomically detailed dolls, drawings, and cue cards (e.g., persons, houses, and objects). However, research has documented that such strategies tend to increase the suggestibility in children and investigators, and are ineffective when conducting high quality forensic interviews (Otgaar et al., 2016; Pipe & Salmon, 2009; Poole et al., 2011; Wolfman et al., 2018). Over the past decade, facility dogs have been introduced into the judicial process, primarily to assist witnesses in testifying in court (Courthouse Dogs Foundation, 2023). More recently, they have been introduced during forensic interviews to reduce the stress and anxiety of the situation, and enhance children's cooperation with the investigator (Howell et al., 2021). It has been reported that the presence of a facility dog may reassure and comfort the alleged victims, thereby enabling them to communicate more clearly during their police interview (Howell et al., 2021; Spruin, Mozova, et al., 2020). This is based on the perceptions of stakeholders and victims. It is also important to ensure that the

presence of a facility dog does not prompt interviewers to use more specific or suggestive questions, as is the case with other props. Nevertheless, this possibility has yet to be investigated. The objective of this study was to document the impact of facility dogs on objective measures of both child and interviewer behaviors in the context of real forensic interviews.

Investigative Interviews

Research has clearly demonstrated that as children get older, the length, informativeness, and complexity of their memory recall increases (Brown & Lamb, 2019; Poole, 2016; Saywitz et al., 2018). The likelihood of misinformation also steadily increases as interviewers move from open-ended free-recall questions (e.g., "You say he took off his shirt; tell me more about that?"), to directive questions (e.g., "What color was his shirt?"), and finally to leading or suggestive questions (e.g., "You do remember that his shirt was blue, don't you?") (Brown et al., 2013; Korkman et al., 2024). This is explained by the fact that information elicited via free recall prompts (recall memory) is more likely to be accurate than information derived from recognition memory but information a child freely retrieves from recall memory may be incomplete (Cyr, 2022; Lamb et al., 2018).

To primarily elicit recall memory, most forensic interview protocols recommend using open-ended questions as often as

possible (Brubacher et al., 2020; see Cyr et al., 2022; Fernandes et al., 2023; Korkman et al., 2024; Lamb, 2016). These protocols typically include two phases: 1) pre-substantive phase—designed to prepare children for the substantive phase with some instructions (e.g., ground rules, rapport building, and narrative practice); and 2) substantive phase—designed to collect the children's narratives with as many open-ended questions as possible. The NICHD protocol was developed on this basis (Lamb et al., 2008). The pre-substantive phase included an introduction to the setting and recording of the interview; discussing things that children like to do to build rapport; explaining and practising of ground rules to counteract children's suggestibility (e.g., say I don't understand, I don't know, correct the interviewer and tell the truth); and memory practice about a recent pleasant event using open-ended questions. The substantive phase begins with a transition phase aimed at addressing the allegation and includes a series of open-ended to more suggestive questions to elicit the children's events under investigation. When an initial narrative is obtained, the interview is then conducted with open-ended utterances, followed by directive questions, and after a break, with option-posing questions that are asked only when necessary to obtain important forensic details that are still missing. Disclosure information, if any, is also collected before the end of the interview (Lamb et al., 2008). Studies conducted using the NICHD protocol have reported an improvement in the quality of the interviews, as evidenced by an increase in the number of open-ended questions used by the interviewers, as well as more details being obtained with open-ended questions (Lamb

et al., 2008). In the present study, interviews were conducted using the NICHD protocol.

Use of Props

Despite good interview protocols designed to help children feel competent during the interviews, some children were still reluctant to disclose the maltreatment they experienced (McGuire & London, 2020). To assist children with this difficult task, while taking into account age-related language and cognitive limitations, various props were introduced into forensic interviews, before empirical studies examined their usefulness. These props have included a variety of options, including the use of normal or anatomically detailed dolls, as well as Human Figure Drawings (HFD), comprising front and back outlines of a child's body, naked or clothed, either of the same sex as the child, or gender neutral. Research has shown that using dolls and HFD did not elicit more accurate details in the children's reports (Pipe & Salmon, 2009; Poole et al., 2011). In addition, interviewers tended to move away from open-ended questions to more specific questions in the presence of these tools, thus increasing the suggestibility of their questions (Aldridge et al., 2004; Salmon et al., 2012; Teoh et al., 2010).

Drawing has been tested in a variety of settings, such as in studies of memory for medical examinations, hospitalizations, emotionally arousing events, and staged events in laboratory settings with non-victimized children. Children are asked to draw freely or specifically (e.g., draw a person or object) and then talk about the event, or to simultaneously draw and talk. The results showed that this technique helped children recall more information (Gross et al., 2006;

Katz et al., 2014; Lev-Weisel & Liraz, 2007; Salmon et al., 2003; Wesson & Salmon, 2001). Indeed, when drawing was combined with open-ended questions, the information was accurate. However, when drawing was combined with misinformation or suggestive questions (Gross et al., 2006), more errors were observed in the reported information. These findings suggest the importance of empirically testing the effects of new tools and props before implementing them in forensic settings.

Facility Dogs

The use of facility dogs is another strategy that has been implemented in legal contexts to help victims and witnesses experience lower levels of stress and anxiety when testifying (Caprioli & Crenshaw, 2017; Courthouse Dogs Foundation, 2023). Facility dogs are selected and trained to work alongside professionals within institutions. Training is provided by nonprofit organizations (e.g., Courthouse Dogs Foundation, 2018). The facility dogs were initially introduced to victims testifying in court. Results from case studies and from the perceptions of legal professionals indicate that the presence of facility dogs in the courtroom is perceived as a positive change. The introduction of these dogs has been shown to reduce the stress and anxiety of witnesses, allowing them to give evidence with greater confidence. Furthermore, the presence of dogs has a limited negative impact on the courtroom and the legal process (Holder, 2013; Howell et al., 2021; Rock & Gately, 2024).

In the context of forensic interviews, two randomized studies conducted by Krause-Parello et al. (2014, 2015, 2018) found that the

presence of a facility dog was associated with a reduction in physiological stress responses. However, other research conducted in the forensic context has methodological limitations (Serpell et al., 2017). Most of the research comprise case studies or report the opinions of stakeholders working either with family violence, and/or in a legal context (Howell et al., 2021; Spruin, Dempster, et al., 2020) or of the victims and their family (Spruin, Mozova, et al., 2020). These participants reported they felt that the dogs presence facilitated the witnesses' ability, and willingness to communicate, feeling more comfortable discussing their experiences and remaining calm enough to provide reliable testimonies. Thus, it can be hypothesized that children's testimonies may be more accurate and complete in the presence of a facility dog. However, this hypothesis has not been empirically tested, although it is supported by professionals, who use facility dogs (Howell et al., 2021; Spruin, Dempster, et al., 2020).

To date, no study has been conducted involving a dog to examine children's reports in the context of forensic interviews. In analogous studies with university students, Capparelli et al. (2020) found that when a dog was present, students reported more details about a negative event they had experienced (e.g., death of a loved one, illness/injury, divorce of parents, and stress at school/work), than when no dog was present. No difference was found in the recall of positive events. Using a randomized group of students, Hunt and Chizkov (2014) examined the effect of a dog's presence on a traumatic or non-traumatic written narrative (expressive writing paradigm) (Pennebaker & Beall, 1986), and self-reported symptoms of anxiety and depression. The results indicated

that the presence or absence of a dog did not alter the components of a traumatic story, assessed as negative emotions. However, the group of students who wrote these traumatic stories in the presence of a dog reported fewer symptoms of stress and depression two weeks later, suggesting that the experience of writing a traumatic story was less unpleasant for them. Finally, Trammell (2019) observed no effect of a dog's presence on a word pairs memorization task and recognition test of these word pairs a week later. Again, college students reported less stress and arousal, and more happiness in the presence of a dog.

Some analogous studies with children are relevant to this study's purpose. In small groups of preschool children (20 children), Gee et al. (2012) compared the effect of the presence of a dog with that of a person or stuffed dog, on children's abilities in several cognitive tasks. In the presence of a dog, children had better speed and accuracy in both, object recognition (Gee, Belcher, et al., 2012), and attentional restriction in an object categorization task (Gee, Gould, et al., 2012). However, their performance on a series of gross motor skills tasks showed mixed results, with accuracy improving on some tasks and weakening on others in the presence of a dog, compared to no dog (Gee et al., 2007).

In summary, there is a positive perception among stakeholders working in criminal justice contexts that the presence of a facility dog could help traumatized victims or witnesses to testify with less stress and more comfort. This perception is supported by research results on the influence of a dog's presence on stress biomarkers (Krause-Parello et al., 2014, 2015, 2018). However, the effects of a facility dog's presence on

cognitive variables, such as memory or recall, have shown mixed results. When the methodological quality of the studies is taken into account, the results are also more nuanced and less conclusive. However, no data are available on the effect of a dog's presence on the sequence of interview steps and questions used in forensic interviews with children. Non-suggestive behavior on the part of the interviewer is critical for protecting the truthfulness of the victims' accounts. It is also important to follow the general principles of phasing the interview, as recommended in the protocols, and prepare and train children for the task of disclosure.

The Present Study

Previous research on facility dogs has primarily focused on the calming effect of dogs on stress and anxiety levels experienced by victims and observed by forensic professionals. Furthermore, these professionals have indicated that victims communicate more clearly during their interviews with the police. However, this perception has not been subject to objective measurement. In addition, this study aims to verify that the presence of dogs does not result in interviewers being more suggestive in their questioning, as has been observed particularly with the use of some interview props. Therefore, this study's purpose was to compare forensic interviews conducted by the same investigators with and without the presence of a facility dog to examine whether: 1) children provided more details about the alleged events, and 2) the interviewers continued to follow the recommended steps of the forensic interview using non-suggestive utterances to elicit disclosure.

METHOD

Participants and Procedures

Totally, 92 forensic interviews (47 and 45 with and without a dog, respectively) were conducted with children between 2014 and 2019. The interviews, that were analyzed from the verbatim transcripts of video recordings, were conducted by 14 investigators from two police organizations in Canada as part of their regular duties, using the standard NICHD protocol, for which they were trained. Each police organization had its own dogs—Labrador, Bernese Mountain Dog Lab mix (Labernese)—that had been trained by the Mira Foundation to assist police officers during forensic interviews. These dogs were selected for their affectionate behavior and trained to remain calm and still for long durations. Of the 61 available interviews conducted with a dog, 14 were excluded from the analyses—12 because the children did not disclose, making it impossible to count the number of details, and 2 because the disclosures did not involve sexual or physical abuse. Additionally, 91 interviews conducted by the same investigators, but without a dog, were reviewed. Of these, 30 interviews were not with the target age group, 10 were with a perpetrator, and 1 was conducted in Spanish. Of the remaining 50 non-dog interviews, 45 were matched to dog interviews. While 71.4% investigators conducted both dog and non-dog interviews, 28.6% had only dog or non-dog interviews (see Appendix). The investigators' mean age was 46.2 years (SD = 6.5), and half were female. Their mean number of years of experience as police and forensic investigators were 24.3 years (SD = 6.8) and 6.2 years (SD = 5.3), respectively.

Interviews conducted with and without a dog were matched for the children's gender, age, and victim-perpetrator relationship (intrafamilial versus extrafamilial). Their ages ranged between 3 and 15 years (M = 8.7, SD = 2.9); 71.7% were girls and 75.6% Caucasians (Table 1); 70.7% comprised sexual abuse allegations, including 2.2% of both sexual and physical abuse and 29.3% of only physical abuse. Interviews conducted in the presence of a dog, included significantly more cases of sexual abuse, $\chi^2(1) = 4.82$, $p = .03$, repeated sexual abuse, $\chi^2(1) = 3.92$, $p = .04$, and a male perpetrator, $\chi^2(1) = 4.96$, $p = .03$. These abuses were reported by victims to be more severe (more touching under clothing) when the dogs were present, $\chi^2(2) = 8.10$, $p = .02$. Perpetrators were more likely to be adults, when the interview was conducted without a dog present, $\chi^2(1) = 3,61$, $p = .05$.

Data Coding

Interviews were transcribed and coded by two independent raters (graduate student and PI), using the manual developed and used by NICHD researchers to code investigative interviews (Lamb et al., 1996; Orbach et al., 2000), translated in French (Cyr et al., 2001). For the types of utterances, three phases of the interview (pre-substantive, transition to allegation, and substantive) were considered. For the number of details, only those in the transition and substantive phases were coded for each type of question. The inter-raters' reliability was assessed throughout the coding of 21% of the interviews. The kappa values were: 0.98 for the number of details, 0.83 for question types, 0.83–1.0 for adherence, 0.67 for distractions, and 0.79 for comments about the dog.

TABLE 1 *Means (Standard Error) and Percentage of Characteristics of Child, and Sexual (SA)*

and Physical (PA) Abuse for Dog Group Conditions

Characteristics	With Dog (n = 47)	Without Dog (n = 45)	p	Phi
Child age	8.7 (2.7)	8.6 (3.1)	0.255	2.897[1]
Child gender (% female)	72.3	71.1	0.540	0.014
Types of abuse				
Sexual abuse (+2SA/PA)	80.9	60	0.024	0.229
Physical abuse (PA)	19.1	40		
More than one SA	37.1	16.1	0.042	0.251
More than one PA	34.5	51.7	0.507	0.107
Child and perpetrator's relationship				
Intrafamilial	26.4	24.2	0.543	0.011
Extrafamilial	25.3	24.2		
Perpetrator gender (Male)	93.6	77.2	0.026	0.233
Perpetrator age (Adult)	72.3	88.4	0.050	0.200
Severity of the SA				
Touches over the clothes	36.1	50.0	0.017	0.361
Touches under the clothes	52.8	19.2		
Penetration	11.1	30.8		
Severity of PA				
Slap. push. shove	27.3	33.3	0.943	0.064
Kick/punch. hit. throw an object	36.4	33.3		
Other	36.4	33.3		

Note. p values obtained from chi-square tests and independent samples t-test, [1]*Cohen's d*

Children's Details

The number of forensic details for each type of question was counted based on the number of words for the forensic responses, excluding hesitations (uh, um, etc.), questions, or clarifications asked. Research has shown that the number of words counted is highly

correlated with the number of details (Dickinson & Poole, 2000). Only the forensic details used by the children to describe the abusive event, including actions, places, persons, moments, thoughts, and feelings, were coded.

Types of Questions

Each question was coded into one of the five categories. Invitations included general invitations (e.g., "Tell me everything that happened from beginning to end"), time-segmenting invitations, that served to break the event into smaller sections, using details provided by the victim (e.g., "Tell me everything that happened from the time he walked into your bedroom until he grabbed your arm"), and cued invitations that emphasized details revealed by the children (e.g., "Tell me more about his hand touching your belly"). The directive questions provided additional information about something the victims had previously addressed (e.g., Why-How). Option-posing questions included all questions that offered a choice, as well as "yes-no" questions (e.g., "Was he in the bathroom, bedroom, or living room?" "Were you wearing underwear?"). Suggestive questions included any prompt that communicated what answer was expected, or introduced new forensic information not disclosed by the child (e.g., "He told you not to tell, didn't he?"). The final category included accurate summaries that were intended to restate content previously provided by the victim (e.g., "You said you were in the kitchen, he put his hands on your shoulders and [...]"), without adding information not provided by the child.

Adherence to the Protocol

The NICHD protocol provides a structure for forensic interviewing, that includes a sequential series of phases and steps. For the protocol's pre-substantive phase, these steps included the interviewer's introduction (one item), four ground rules—tell the truth, correct the interviewer, say I don't know, say I don't understand—(four items), rapport building—ask children about things they like to do, invitation with action verbs, no specific questions—(three items), and episodic memory training—general invitation, at least one cued invitation, relevant choice of cued, at least one time-segmenting invitation, short and clearly worded time-segmenting invitations, no specific question—(six items). Its substantive phase covering the transition and disclosure consisted of six items: getting the allegation, obtaining a first full account of the abuse, verifying one or more episodes of abuse, obtaining a majority of forensic details, pausing to check for missing forensic information, and checking for any disclosures.

Digression

Digressions were defined as an interruption of the account about the abuse or the pre-substantive phase tasks (think what you like to do, ground rules, episodic memory practice) due to the dog's movement, or a comment by the child or investigator about the dog.

Comments about the Dog

Comments about the dog were documented for both the children and investigators. The children's comments about the dog were coded as positive (e.g., "A chance he is here"), neutral (e.g., "He wanted to put his head here") or negative (e.g., "That is disgusting, he pissed me off"). For the investigator, all comments (e.g., "He has been quiet, hasn't he?" "You can pet him," "He's here for you"), commands to the dog (e.g., "OK (dog's name sit here") or dog-related questions (e.g., "Do you have a dog at home?") were coded.

RESULTS

Preliminary Analyses and Data Transformation

Analyses were based on generalized linear mixed models (GLM) in SPSS v.25, which controlled for each participant's repetition of observations (Hayes, 2006). As a preliminary step, we tested several variables related to the characteristics of the abuse, the child, and the police officer to identify possible covariates. These included the relationship to the perpetrator, the type and frequency of abuse, the age and gender of the child, and the age, gender, and experience of the police officer. We used ANOVAs, t-tests, and correlations to identify any factors that could affect the study's outcomes: the proportion of details, the total adherence to the protocol, and the proportion of question types. As these variables were not significantly related to either outcomes or groups, they were not used as covariates, with the exception of child's age which correlated, $r = 0.50$ ($p < .001$), with the number of details for the substantive part of the interview. To account for differences in interview length, the proportions of details for each type of question, and proportions of types of questions, digressions, and comments were calculated, and used as outcomes in the analyses. For comparing the presence of dogs on outcomes, GLM analyses were also done for the different phases of the interview. In order to facilitate a more accurate interpretation of the strength of the effect size ($\eta 2$) obtained, we have employed the benchmarks proposed by Cohen: small ($\eta 2 = 0.01$), medium ($\eta 2 = 0.06$), and large ($\eta 2 = 0.14$) effects (Cohen, 1988).

Proportion of Details

Two GLMs 2 x 4 (Dogs [with, without] x Questions [invitation, directive, option-posing/suggestive, summary]) on the proportion of details were conducted: one each, for the transition and substantive phases. These analyses were carried out with the child's age as a covariate. The results (Table 2) showed no significant effect of the presence of a dog for either the transition or substantive phase, and no interaction effect of dog by details for these two phases. Medium and large interaction effects of the question type by age were found for the transition and substantive phases, respectively.

The age variable was grouped into three categories (1 = under 6 years, 2 = 7-10 years, 3 = 11 and over) for the post hoc analysis. For the transition phase, simple effects analysis revealed that older children provide more proportion of details in response to invitations (M = 47.7, SD = 118.69) than the youngest (M = 4.07, SD = 6.83) and middle age group (M = 13.74, SD = 22.89) ($p < .001$). No age-related differences were observed for the other types of questions. In the substantive phase, children aged 11 years and older provided more proportion of details to all types of questions, while children under 6 years old gave more proportion of details for invitations only. The 7–10-year age group provided more proportion of details for directive and invitation questions (p < .001).

TABLE 2 *Means (Standard Deviations) and GLM Statistics for the Proportion of Details by Types of Question during the Transition and the Substantive Phase for the Dogs (n = 47) and no Dogs Groups (n = 45).*

Questions	Means (Standard Deviations)		GLM		
	With Dog	Without Dog	Effect	$F (1, 89)$	η^2
Transition Phase					
Invitation	17.2 (57.6)	25.7 (77.3)	Dogs	0.37	.00
Directive	1.98 (8.1)	0.83 (5.4)	Questions	1.05	.01
Option-posing/suggestive	0.53 (1.9)	0.65 (2.5)	Dogs X Questions	0.10	.00
Summary	0 (0)	0.36 (2.4)	Age X Questions	4.92*	.05
Substantive Phase					
Invitation	19.70 (2.4)	22.50 (14.2)	Dogs	0.10	.01
Directive	11.37 (1.8)	11.24 (7.4)	Questions	0.82	.01
Option-posing/suggestive	7.95 (6.7)	7.38 (4.9)	Dogs X Questions	1.45	.02
Summary	6.53 (5.9)	5.45 (5.1)	Age X Questions	20.16***	.19

* $p < .05$ *** $p < .001$

Adherence to the Protocol

For protocol adherence (see Table 3), a 2 x 4 ANOVA analysis (Dogs [with, without] x Sub-Phases [ground rules/rapport building, episodic memory training, transition/substantive, total] showed a medium significant difference between the two groups, with a higher adherence in the substantive phase when the dog was present (M = 4.6; SD = 1.1), than when the dog was not present (M = 4.0; SD = 1.4). This difference was due to a higher percentage of discussions about any disclosure, $t(91)$ = 7.56, p = 0.01, *Phi* = 0.310, with and without a dog present (74.5% and 46.7%, respectively). No significant difference was observed for the ground rules/rapport building, episodic memory practice, or global adherence score.

Types of Questions

For the proportion of question types (Table 4), three GLM 2 x 4 (Dogs [with, without] x Questions [invitation, directive, option-posing/suggestive, summary]) were conducted according to each phase of the interview. For the pre-substantive phase, the results showed a large significant effect based on the question types, no significant effect of the presence of a dog's, and no interaction effects. Analyses of simple effects indicate that the proportion of each type of question differed significantly between them, with more invitations (M = 0.43; SD = 0.03) than directives (M = 0.24; SD = 0.02), option-posing/suggestive (M = 0.14; SD = 0.02), and summary questions (M = 0.06; SD = 0.01) (p < .001).

For the transition and substantive phases, the analyses revealed a large significant effect based on the question types, no significant effect of a dog, and no interaction. For the transition phase, an analysis of the simple effects of the proportions of types of questions indicates that the questions differed significantly between them ($p < .01$), except for the proportions of summary, which did not differ significantly from the proportions of directive questions (invitation: $M = 0.80$, $SD = 0.03$; directive: $M = 0.04$, $SD = 0.01$; option-posing/suggestive: $M = 0.10$; $SD = 0.02$; summary: $M = 0.02$, $SD = 0.01$). For the substantive phase, simple effects analyses indicated that the proportions of summary ($M = 0.12$, $SD = 0.01$) were significantly lower ($p < .001$) than those of invitation ($M = 0.29$, $SD = 0.02$), directive ($M = 0.29$, $SD = 0.02$), or option-posing/suggestive questions ($M = 0.29$, $SD = 0.02$).

Effect of Dogs in Interviews

In addition to the main variables, other aspects of these interviews were documented to provide additional insights into the presence of dogs during forensic interviews. The mean length of the interviews was 54.3 minutes ($SD = 25.0$). No significant mean differences, $F(1, 92) = 2.77$, $p = .09$, $d = 0.348$, were observed between those conducted with dogs ($M = 58.5$, $SD = 22.1$) and without dogs ($M = 49.9$, $SD = 27.4$).

The distractions, defined as an interruption in the narrative process, represented an average of five occurrences per interview. On average, the dog was responsible for three of these interruptions ($M = 3.02$, $SD = 4.2$), one in the pre-substantive phase ($M = 0.65$; $SD = 1.2$), and two in the substantive phase ($M = 2.36$; $SD = 3.0$), while the child interrupted the interview to talk about the dog for a mean of

2.57 other times ($SD = 4.8$), two of which were done during the substantive phase ($M = 2.17$; $SD = 3.9$). Interviewer distractions about the dog were rare ($M = 0.32$; $SD = 4.8$). When comparing the pre-substantive and substantive phases that included transition, no significant difference was observed for distractions coming from the interviewer, ($F(1, 46) = 2.00$, $p = .16$, $\eta^2 = 0.042$), but significant effects were observed for the dog and child, $F(1, 46) = 31.06$, $p < .001$, $\eta^2 = 0.407$ and $F(1, 46) = 35.5$, $p < .001$, $\eta^2 = 0.436$ respectively, with more distractions during the substantive phase. The same results were obtained when the proportion of distractions per minute were calculated, by taking into account the different lengths of the interview phases.

On an average, children made 16.3 ($SD = 17.4$) comments about the dog per interview while the investigators made slightly more comments about the dog ($M = 22.2$; $SD = 19.3$). Children were more likely to make neutral comments ($M = 11.9$, $SD = 4.2$) than positive ($M = 3.7$, $SD = 1.9$) or negative ($M = 0.27$, $SD = 0.9$) comments about the dog. The children's ratio of comments (number of comments by phase/total number of comments) differed significantly among the three phases, $F(2, 46) = 5.04$, $p = .03$, $\eta^2 = 0.099$ with simple tests ($p < .01$), indicating a lower proportion of comments during the transition phase ($M = 0.07$; $SD = 0.2$) than during the pre-substantive ($M = 0.35$; $SD = 0.32$) or substantive ($M = 0.57$; $SD = 0.37$) phases; which did not differ from each other. A significant difference was also found for police officers, $F(2, 46) = 15.6$, $p < .001$, $\eta^2 = 0.253$, with a significantly higher proportion of comments made during the substantive phase ($M = 0.63$; $SD = 0.31$) than pre-substantive ($M = 0.31$; $SD = 0.28$) or transition ($M = 0.06$; $SD = 0.20$) phases.

TABLE 3 *Means (Standard Deviations) and Two-Way ANOVA Statistics for the Adherence to the Steps of the Protocol for Dogs (n = 47) and no Dogs Groups (n = 45).*

	Means (Standard Deviations)		Anova	
Adherence	With Dog	Without Dog	F (1, 91)	η^2
Ground Rules/ Rapport Building	6.4 (0.6)	6.2 (1.1)	0.39	.00
Episodic Memory Training	3.1 (1.3)	2.8 (1.7)	0.83	.01
Substantive Phase	4.6 (1.1)	4.0 (1.4)	5.43 *	.06
Global Adherence	14.0 (2.0)	13.0 (3.1)	3.60	.04

* $p < .05$

TABLE 4 *Means (Standard Deviations) and GLM Statistics for the Proportion of Types of Question during the Episodic Memory Training (EMT), the Transition and the Substantive Phase for the Dogs (n = 47) and no Dog Groups (n = 45).*

	Means (Standard Deviations)		GLM results		
Questions	With Dog	Without Dog	Effect	F (df_1, df_2)	η^2
EMT Phase					
Invitation	0.44 (0.23)	0.42 (0.29)	Dogs	3.83 $^\Delta$ (1, 90)	.04
Directive	0.26 (0.18)	0.21 (0.20)	Questions	66.92 *** (3, 90)	.43
Option-posing/suggestive	0.16 (0.17)	0.11 (0.13)	Dogs X Questions	0.17 (3, 90)	.00
Summary	0.07 (0.09)	0.05 (0.07)			
Transition Phase					
Invitation	0.83 (0.25)	0.76 (0.34)	Dogs	3.28 (1, 90)	.04
Directive	0.07 (0.14)	0.02 (0.06)	Questions	257.83 *** (3, 90)	.74
Option-posing/suggestive	0.09 (0.19)	0.12 (0.22)	Dogs X Questions	1.06 (3, 90)	.01
Summary	0.01 (0.05)	0.03 (0.15)			

Substantive Phase					
Invitation	0.26 (0.11)	0.31 (0.19)	Dogs	0.02 (1, 90)	.02
Directive	0.30 (0.15)	0.29 (0.16)	Questions	66.84 *** (3, 90)	.43
Option-posing/suggestive	0.30 (0.10)	0.29 (0.14)	Dogs X Questions	2.13 (3, 90)	.03
Summary	0.13 (0.6)	0.11 (0.8)			

$^\Delta$ $p = .053$ *** $p < .000$

DISCUSSION

This study's purpose was to increase knowledge on the effect of the presence of facility dogs during forensic interviews with children based on the number of details reported by them, and also to verify that a facility dog's presence did not alter the non-suggestive behaviors desired by the investigators. Overall, the results of this study do not support the perceptions of justice stakeholders (Howell et al., 2021; Spruin, Dempster, et al., 2020; Spruin, Mozova et al., 2020), that the presence of a dog, helps witnesses to more clearly communicate the alleged facts during the interview. The lack of a significant difference in the number of details between the children in the dog and non-dog groups did not confirm this general perception. This study's results are, therefore, consistent with those of Hunt and Chizkov (2014), who showed that the presence of a dog did not affect the components of students' traumatic stories, and Trammell (2019), who did not observe a significant effect of the presence of a dog when students were learning a memory task. However, its results differ from those of Capparelli et al. (2020), who observed that university students reported more details in the presence of a dog for a negative, but not for a positive

event. The participants' age, context of the task, and content of the narrative are some of the reasons that could explain these divergent results. This study included children under the age of 15 years, while three other studies included undergraduate students. This difference is important because both age and trauma affect participants' cognitive (memory, language, etc.) and relational abilities (Cyr, 2022 for a review). The task contexts in these three analogous studies (specific memory task, written or brief oral report of an event) are also quite different from those of a forensic interview, which involves a face-to-face interview lasting approximately 45–60 minutes. The third dimension is the content. In two studies (Capparelli et al., 2020; Hunt & Chizkov, 2014), undergraduate students reported a traumatic event that they had experienced (death of a loved one, illness, injury, divorce, stress at school, etc.). Reporting sexual or physical abuse to an investigator may involve socio-legal consequences for themselves or others, and other emotional and relational issues (shame, fear of punishment, embarrassment, concern for others, etc.) (Malloy et al., 2011; McElvaney et al., 2020), that need to be addressed during forensic interviews. Thus, even though the presence of a dog may affect the children's

levels of biological markers of stress, the reassuring presence of the investigator and their non-suggestive supportive interventions are necessary to overcome the children's reluctance to disclose (Blashbag et al., 2018; Hershkowitz et al., 2017) and have been shown to be effective in the revised NICHD protocol.

For the investigators, as the presence of a dog did not change their interview techniques, the interviews were not more suggestive. It was important to ensure that the interview protocol was used in its entirety, and that the interview was based on open-ended questions and did not become suggestive, as had been observed with the use of props, such as dolls or HFDs (Poole et al., 2011). For the adherence to the protocol, dog's presence was associated with a slight increase in questions during the interview's substantive phase regarding any disclosure, suggesting a greater adherence to the protocol's steps. Otherwise, the results indicated no difference between the two groups, in terms of adherence to the various phases and activities recommended for forensic interviews (Korkman et al., 2024). However, it is important to note that adherence to the protocol can be improved in several ways to achieve better cooperation from children and quality of details. For example, more invitation questions and no specific questions should be asked during episodic memory training, or the children should be better supported with follow-up invitations to obtain a full account in the substantive phase. This finding is in line with those of other studies that advocate better support for investigators through regular follow-up or post-training feedback. Such support may have influenced their competence during the interviews, which was associated with improved performance (Cyr et al., 2012, 2021; Lamb, 2016; Powell, 2013).

In addition, the presence of a dog could interrupt the flow of the forensic interview and distract both the children and investigators (Holder, 2013; Howell et al., 2021). While the average of five distractions may not seem excessive, each interruption represents a disruption in the child's ability to narrate the facts. In the absence of other studies that have quantified these distractions, it is challenging to assess whether they are prevalent or not. It would be beneficial for future studies to examine this variable in order to determine the impact of these distractions. It is likely that the number of distractions was due to the fact that the dogs were trained to remain calm and quiet. In addition to the distraction, this study also found that both the children and police officers talked frequently about the dog during the interviews, with a mean over 15 turns of speech, each. Given that young children have a limited capacity to concentrate and participate in an interview, it would be beneficial to gain a deeper understanding of the impact of these comments on the interview process. Furthermore, as the majority of the children's interventions about the dog were neutral and consisted of questions about the dog (e.g., "Is he old ?") or comments about his behavior (e.g., "He snores"), it is speculative to what extent the dog is seen by children as a source of comfort. Conversely, the more frequent comments made by the investigators during the substantive part of the interview suggest, that they used the dog to encourage the children to feel comfortable with it ("You can pet him," "He is there for you"), or perhaps to overcome some reluctance or discomfort observed by them. Further studies should verify the hypothesis that the presence of a dog is reassuring for interviewers, and that it represents a tool in case of difficulties.

Limitations

This study had some limitations despite its rigor and pre-experimental design, with two matched groups based on real forensic interviews. Its most important limitation was the lack of control over the investigator variable. As a result, it was unable to balance interviews with and without dogs by the same investigators or include this variable as a control in the statistical analyses because some investigators conducted too few interviews. Although investigators can influence the frequency of disclosures (Hershkowitz et al., 2014), interviews were only used, when children have disclosed. As these interviews were conducted in the usual context of the investigators' work, it was not possible to randomly assign children, which would have increased the rigor of the research design. As with other studies on forensic interviews with children, the accuracy of the details reported cannot be verified, as in analogous studies.

CONCLUSION

This study's findings suggest that the presence of a facility dog has little effect on the behaviors of children and investigators; children do not provide more detailed accounts. Recent studies with and without facility dogs have shown that their presence does not decrease children's reluctance during forensic interviews (Côté, Cyr, Brillon, Dion, et al., 2024) or increase their attentiveness (Côté et al., 2024). Further studies examining the interview experiences of children and investigators (expectations, satisfaction, and children's long-term symptoms) are needed to better understand a dog's contribution to forensic interviews. For example, in studies conducted with undergraduate students, it was observed that they reported more happiness and less stress and arousal in a memory test session

(Trammel, 2019), and fewer symptoms of stress and depression two weeks after reporting about traumatic events (Hunt & Chizkov, 2014). This last finding suggests that the experience of writing a traumatic story may have been less unpleasant for the group accompanied by a support dog.

For the investigator, the use of a structured protocol, in the present study the NICHD standard protocol, may have helped to maintain non-suggestive questions, as well as the steps recommended for forensic interviews (Brubacher et al., 2020; Korkman et al., 2024). Thus, the effect of a dog's presence should be studied using other interview protocols to ensure that the interviewers do not become more suggestive.

This study's results did not show a benefit from the presence of a dog, particularly on the number of details reported. In the absence of rigorous studies conducted in forensic interviews, and the large number of variables that need to be studied (type of dog, dog training, child-dog interaction, forensic protocol used, supportive interventions, child reluctance, etc.), it seems premature to recommend the widespread use of dogs in forensic interviews. There is a need to increase scientific knowledge on the positive, negative, or neutral effects of having a dog present during forensic interviews, as well as the mechanisms underlying these effects (Capparelli et al., 2020). More rigorous studies, as well as the publication of negative results derived from high-quality research, would help police organizations make decisions about the use of canines in forensic interviews.

Implications for Policy and Future Directions

Conducting investigative interviews with children is a complex task for investigators,

and a stressful and demanding cognitive task for children. Hence, the desirability of searching for strategies or techniques to support both the children and investigators during the interview. Facility dogs are one of these strategies being increasingly used in the context of investigative interviews. Although facility dogs may appear to be a promising strategy, further studies are needed to ensure that it is empirically supported before promulgating and making its presence widespread in forensic contexts.

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Distribution of interviews with and without dog for each interviewer.

Interviewer	Interviews	
	With Dog	Without Dog
1	4	3
2	8	5
3	2	1
4	5	2
5	0	2
6	6	4
7	2	3
8	3	2
9	1	1
10	0	4
11	2	0
12	1	0
13	10	14
14	3	4

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