Brief Report: Lie-telling in Children with Fetal Alcohol Spectrum Disorder

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Objectives The lie-telling abilities of children with fetal alcohol spectrum disorder (FASD) (aged 4–8 years) were tested using a temptation resistance paradigm. Methods Children were told not to peek at a forbidden toy while left alone in a room. Later children were asked if they peeked at the toy as well as follow-up questions to see if they could conceal their peeking behavior and maintain their lie in subsequent verbal statements. Results Approximately 78% of the children peeked at the toy. However, 94% of the FASD children lied about peeking, a rate that is much higher than the non-FASD control group (72%). As age increased, FASD children were better at concealing their lies and maintaining semantic leakage control than non-FASD children. Conclusions This is the first study to specifically test lying in children with FASD and has implications for remediation and understanding secondary disabilities in these children, which will lead to further research in this area.

Key words fetal alcohol spectrum disorder; lying, problem behaviors.
tendency to lie and deceive others. Although lying has frequently been noted as a concern among caregivers of children with FASD (FAS Community Resource Centre, 2006), there has been limited research examining lying in children with FASD. Nash et al. (2006), using the Child Behavior Checklist, found that children with FASD were more likely to lie or cheat, steal, and display a lack of guilt when compared to children with Attention Deficit Hyperactivity Disorder (ADHD). Thus, there is some initial evidence that lying may be a secondary disability associated with FASD, but more research is needed to verify this as well as determine factors that may be related to lying behaviors in FASD.

Children have been observed telling lies for self protection as early as 24 months of age (Newton, Reddy, & Bull, 2000). Experimental studies examining normative samples of children’s lies have typically relied on a modified temptation resistance paradigm, where children are instructed not to peek at a toy while the experimenter is absent (~80–90% of children do peek). They then have a naturalistic opportunity to spontaneously lie, when the experimenter returns and asks whether or not the children peeked. Using a modified temptation resistance paradigm, Lewis, Stanger, and Sullivan (1989) found that 38% of 3-year olds who peeked at the forbidden toy denied peeking, while 38% confessed to peeking at the toy, and the remaining children gave no answer. Similarly, Talwar and Lee (2002) found that most children between 4 and 7 years of age lied about peeking at a toy, but 64% of 3-year olds confessed to their transgression. Thus, some children as young as 3 years of age, and most children by 4 years of age, can and will tell lies to conceal transgressions and to escape potential punishment.

However, research has found that young children are not skilled lie-tellers (Polak & Harris, 1999; Talwar & Lee, 2002). To successfully deceive another, a liar must be able not only to produce a false statement but also ensure consistency between their initial lie and subsequent statements to avoid detection. The ability to maintain consistency between statements during deception is known as semantic leakage control (Talwar & Lee, 2002). In several studies of children’s abilities to maintain their lies, Talwar and colleagues have found age differences between preschool children and older children (Talwar & Lee, 2002; Talwar, Gordon, & Lee, 2007; Talwar, Murphy, & Lee, 2007). In one study, while the majority of preschoolers revealed incriminating information in their subsequent statements after falsely denying a transgression, approximately half of 6 and 7-year olds were able to conceal and maintain their lies when answering follow-up questions (Talwar & Lee, 2002). Adult raters were easily able to detect the lies of the younger children who revealed their transgressions in their statements, but were unable to distinguish the older children who maintained their lies from truth-telling children. This age trend continued in another study with children between 7 and 11 years of age (Talwar, Gordon, and Lee 2007). Thus, it appears that preschool-aged children are limited in their semantic leakage control abilities and consequently are not skilled, elaborate lie-tellers. As they get older, however, children become more sophisticated at concealing their lies verbally.

It has been suggested that developmental differences in lying are due to children’s cognitive development (Carlson, Moses, & Hix, 1998; Polak & Harris, 1999; Talwar & Lee, 2002). Carlson et al. (1998) found that preschool children who experienced difficulty with executive functioning tasks, especially those that require a high level of inhibitory control, demonstrated difficulties with deception tasks. Hence, children may have difficulties with successful lie-telling if they lack advanced executive functioning skills.

The goal of this study was to examine lying among young children (aged 4–8 years) with FASD. The problematic behaviors and delinquency combined with social skills and executive functioning deficits common in FASD may be associated with lying among children with FASD. The present study examined FASD children’s lie-telling abilities using a temptation resistance paradigm, where they were told not to peek at a forbidden toy. We hypothesized that, relative to a control group, children with FASD would demonstrate high rates of lying but they would be poor at maintaining their lies.

**Method**

**Participants**

The participants in the non-FASD group in this study were 24 children between 4 and 8 years of age. There were 12 preschool children (with a mean age in months of M = 66.16; SD = 9.4) with six girls; and 12 early elementary children (M = 83.4, SD = 6.8) with five girls. The participants in the FASD group were 23 children between 4 and 8 years of age. There were 13 preschool children (M = 67.53; SD = 9.6) with six girls; and 10 early elementary children (M = 89.8, SD = 9.9) with five girls. All children in the FASD group had previously been medically diagnosed with an alcohol-related disorder falling under the umbrella term FASD (neurobehavioral disorder: alcohol exposed, or alcohol-related neurodevelopmental disorder). In order to be diagnosed with any of
the classifications that fall under FASD, children would have had confirmed PAE and cognitive deficits suggesting some degree of brain dysfunction and thus would have met the contemporary diagnostic criteria for FASD. Diagnosis of an FASD was formulated based on the DPN (diagnostic prevention network) model developed by Drs. Astley and Clarren at the University of Washington (1999, 2004). This diagnostic approach is supported in the recently published Canadian Guidelines for Diagnosis of FASD (Chudley et al., 2005). Evidence of growth deficiency, facial dysmorphology, and brain dysfunction was evaluated in each case along with a reliable confirmation of prenatal exposure to alcohol. All clinicians who diagnosed children with FASD in this study had been directly trained on the DPN model. The diagnostic information was obtained from the health records (with parental permission) of each child to confirm that a physician (typically a pediatrician) had diagnosed the child.

Children in the FASD group were recruited through medical FASD diagnostic clinics and FASD community agencies. Most of the children in the FASD group either attended a specialized FASD academic program or regular school programs with extra supports and resources, and all spoke fluently and did not have difficulty understanding the tasks. Children in the non-FASD groups were recruited in another city through a database of previous participants in studies who indicated their willingness to participate in future studies. All children in the non-FASD group had no diagnosis of FASD or any other developmental disability. They all attended regular school programs. The Peabody Picture Vocabulary Test-Third Edition (PPVT-III) was administered to all children to determine whether the two groups differed on verbal ability. As measured with the PPVT-III, children in the FASD group (M = 99.26, range 73–118) had comparable verbal ability to those in the non-FASD group (M = 101.96, range 79–119). Informed consent was obtained from the guardian of each child and assent was obtained from each child. This study was approved by the appropriate Institutional Review Board.

Procedure

A temptation resistance paradigm adapted from previous studies (Lewis, et al., 1989; Talwar & Lee, 2002) was used to examine children’s lying behavior. Children were seen individually. The child was instructed to turn around in the chair so that the back was towards the researcher, while the researcher played a “clue” sound from a toy. Then, children were asked to guess the toy’s identity. All toys were familiar to the children from television programs and stories (e.g., Elmo) and all made accompanying sounds that were clues to their identity. After the child correctly guessed the identity of two toys, the researcher told the child she had to leave for a minute. They were told the third would be left on the table and the sound would be played. The third toy was a Mickey Mouse doll and the sound that accompanied it was unrelated to the doll and came from a singing pop bottle. Consequently, children were unable to guess the identity of the toy based upon the sound that they heard. The child was told not to turn around and peek while the researcher was out of the room. The researcher then left the room for 1 min. A hidden video camera recorded the child’s behavior while the researcher was absent. When the researcher returned to the room she told the child not to turn around and covered the toy with a sheet. Once the toy was covered the child was instructed to turn around in their chair. The child was then asked the critical question “When I was out of the room, did you peek at the toy?” and the follow-up question “Who do you think the toy is?” Children who gave a correct answer (the third toy was a Mickey Mouse doll) were asked “How did you know who the toy was?” Due to the small cell sizes, Fisher’s exact tests were conducted to examine between-group differences for three dependent variables: peeking (peek vs. no peek), lying behavior (lie vs. confess), and semantic leakage control (conceal vs. no concealment). In addition, peeking latency (length of time it took to peek) was analyzed using an analysis of variance (ANOVA).

Results

Children’s peeking behavior

There were no significant differences between the number of children who peeked in the FASD group (78%) and non-FASD group (75%). There were also no significant peaking behavior differences for age or sex of child in either group. All peekers returned to their original posture either as soon as they finished peeking or when they heard the experimenter open the door. A (type of child: non-FASD vs. FASD) × 2 (age group) × 2 (sex) ANOVA was performed with peeking latency as the dependent variable. There were no significant differences found. On average, children in the FASD group peeked after 13.6 s (SD = 15.5) and in the non-FASD group after 10.4 s (SD = 5.5) had elapsed. Half of the children peeked within 5 s.

Children’s lie-telling behavior

Children’s responses to the critical question “Did you peek at the toy?” were analyzed. When the number of
lie-tellers in the FASD group and the non-FASD group were compared there was a significant difference, (Fisher’s exact test, \( p < .05 \)). In the FASD group, 17 (94.4%) of the 18 peekers lied about peeking, while only one child confessed. In the non-FASD group, 13 (72.2%) of the 18 peekers lied (Fig. 1). All of the children who refrained from peeking stated that they had not peeked. For the FASD group, there were no significant lying behavior differences for age or sex of child. For the non-FASD group, there was no significant lying behavior difference for sex of child. There was a significant difference for age (Fisher’s exact test, \( p < .05 \)). Elementary school children were more likely to lie (88.9%) than preschoolers (44.4%) (Fig. 1).

**Children’s semantic leakage control**

Children’s answers to the follow-up question “Who do you think the toy is?” were used to assess lie-tellers’ ability to maintain semantic leakage control. Lie-tellers responded by either saying the correct answer (e.g., Mickey Mouse), thereby implicating themselves in peeking and lying, or they concealed their lie by feigning ignorance or by guessing another toy. Lie-teller’s responses were collapsed into two groups: those who said the toy was Mickey Mouse and those who gave non-Mickey Mouse responses. There was a significant difference in responses between FASD and non-FASD groups (Fisher’s exact test, \( p > .05 \)). In the FASD group, 58.8% of lie-tellers gave non-Mickey Mouse responses compared to only 38.5% in the non-FASD group. All children who did not peek gave incorrect answers. For the FASD group, there was no significant sex of child effect, but there was a significant age difference (Fisher’s exact test, \( p < .05 \)). Older children (87.5%) were more likely to conceal their transgression by feigning ignorance or giving another response than younger children (33.3%). There were no significant differences in the non-FASD group for age or sex of child.

**Discussion**

We examined lying among young children with and without FASD using a temptation resistance paradigm where they were instructed not to peek at a toy. While the majority of children peeked, significantly more children with FASD lied about peeking at the toy than children without FASD. Similar to previous studies, 72.2% of children in the non-FASD group lied with older children more likely to lie than younger children. This age difference was not observed in the FASD group, where all but one child lied. The rate of lying observed among the FASD children is higher than all previously reported findings with non-FASD children (Lewis et al., 1989; Polak & Harris, 1999; Talwar & Lee, 2002). Interestingly, approximately half of the children in the FASD group feigned ignorance when asked the follow-up question about the identity of the toy and this increased with age. Previous studies with non-FASD children have suggested that children under 8 years of age are not skilled at maintaining semantic leakage (Polak & Harris, 1999; Talwar & Lee, 2002). However, the present study suggests that FASD children may be skilled lie-tellers at an earlier age.

Previous research has found that children who engage in more transgressions and delinquent behavior are more likely to lie and to learn to lie successfully as a strategy to conceal their behavior (Achenbach & Edelbrock, 1981; Stouthamer-Loeber, 1986; Gervais, Tremblay, Desmarais-Gervais, & Vitaro, 2000). Taken together, the findings that children with FASD have a higher rate of lying and are better at concealing their lies, suggest that children with FASD may learn to use lying as a strategy to conceal their transgressions at a young age. These lying behaviors may be related to later secondary disabilities such as trouble with the law and delinquency. Further research is needed to determine whether children with FASD lie more often in other real-life contexts and whether lying is correlated with later secondary disabilities and frequency of transgressive behaviors. Further research should examine factors that may be related to lying such as executive functions and theory of mind, which have been implicated in non-FASD children (Carlson et al., 1998; Polak & Harris, 1999;...
Talwar, Gordon, and Lee 2007). Nevertheless, special emphasis on helping children with FASD understand the consequences of lying is warranted. This is the first study to specifically examine lying behaviors in children with FASD, and although the sample size is small it provides initial evidence for higher rates of lying among children with FASD, and calls for more research with larger sample sizes and comparisons with both age and developmentally matched controls.

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References


