


# Sexual Abuse Disclosure Mediates the Effect of an Abuse Prevention Program on Substantiation

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## Abstract

Although abuse prevention programs have proliferated, little research has explored the direct effects of such programs on actual child sexual abuse disclosure rates, and no research has explored the effects of such programs on child sexual abuse substantiation. Employing a quasi-experimental design, the present research reflects an exploration of the effects of exposure to the Think First and Stay Safe™ abuse prevention program on abuse disclosure rates of 319 children who underwent a child forensic interview within 2015–2018 in a Midwestern child advocacy center. Supporting our mediational hypotheses, children exposed (vs. not exposed) to the Think First and Stay Safe™ program were significantly more likely to disclose abuse during the forensic interview, which in turn predicted significantly increased abuse substantiation likelihood.

## Keywords

child sexual abuse, disclosure, substantiation, child sexual abuse prevention programs, program assessment

Child sexual abuse affects an estimated 58,000 children annually (approximately 1 in 4 girls and 1 in 20 boys; Finkelhor, Turner, Shattuck, & Hamby, 2015; U.S. Department of Health & Human Services, 2016), cutting across socioeconomic class and racial demographic backgrounds (Krug, Dahlberg, Mercy, Zwi, & Lozano, 2002; Martyniuk & Dworkin, 2011; Pereda, Guilera, Forns, & Gómez-Benito, 2009), resulting in substantial societal costs for both victims and offenders, as well as families and communities (Fang, Brown, Florence, & Mercy, 2012). The consequences of child sexual abuse for victims are myriad, including emotional and mental health problems, unhealthy sexual behaviors, academic difficulties, substance abuse, delinquency, crime, teen pregnancy, and eating disorders (e.g., Briere & Runtz, 1986; Dube et al., 2005; Simons & Whitbeck, 1991, for a review see Amado, Arce, & Herraiz, 2015). Such consequences highlight the need for research exploring predictors of children's disclosures of alleged sexual abuse, particularly because abuse disclosure facilitates identification and prevention of abuse. Yet, children are often reluctant to disclose abuse, delay, or even recant abuse disclosures (e.g., Malloy, Lyon, & Quas, 2007; for a review, see Lyon, 2007).

Prevention programs designed to educate children about sexual abuse have proliferated (e.g., Citak Tunc et al., 2018) and may increase children's knowledge about abuse and abuse risks (Finkelhor, 2009; see also Davis & Gidycz, 2000). Yet, little research has directly assessed the effects of child sexual abuse prevention programs on disclosure rates of child sexual

abuse (Zwi et al., 2007), and no research has explored effects of prevention programs on child sexual abuse substantiation rates. The paucity of such research has given rise to criticisms of prevention programs (e.g., Krivacska, 1990; McGrath & Bogat, 1995; Reppucci & Haugaard, 1989), including a report from the Catholic Medical Association Task Force (Executive Summary, 2012), arguing against the deployment of prevention programs, claiming that they are ineffective at best and potentially harmful to children at worst (for a review, see Finkelhor, 2007). Such criticisms are rooted in arguments that children lack the cognitive capacity to understand and act on the fundamental principles taught within the programs and that recent meta-analyses fail to provide empirical evidence that the programs effectively lower the rate of abuse (Davis & Gidycz, 2000; Walsh, Zwi, Woolfenden, & Shlonsky, 2018). Yet, as Finkelhor (2007) suggests, a growing body of research reveals that prevention programs might facilitate abuse disclosure. Moreover, although there is no research directly linking prevention programs to diminished child sexual abuse prevalence, disclosure has the potential to prevent continued abuse, at least

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in part because it is a predictor of abuse substantiation (e.g., Haskett, Wayland, Hutcheson, & Taviana, 1995).

The present research serves to inform the practical question of the utility of abuse prevention programs, filling a gap in research by directly assessing the effects of a child sexual abuse prevention program on actual disclosure of child sexual abuse. Moreover, this study reflects the first to our knowledge to explore the potential effect of an abuse prevention program on increased child sexual abuse substantiation rates—an effect we expect to be statistically mediated by elevated disclosure rates.

### Effects of Abuse Prevention Programs

Despite some skeptical criticism of abuse prevention program effectiveness, such programs have proliferated in the United States and Canada beginning in the 1980s (Wurtele & Miller-Perrin, 2017) and are often implemented in schools. Prevention programs typically focus on teaching children to recognize abusive situations and possible abusers, encourage children to refuse sexual requests and to get away from perpetrators, to disclose the abuse to a trusted adult, and teach children that abuse is never the child's fault (Wurtele, 2008). Three meta-analyses assessing the effectiveness of prevention programs suggest that children who participated in such programs (compared to children in control groups) scored higher on measures of abuse prevention–related knowledge and self-protection skills, generally (Davis & Gidycz, 2000; Walsh et al., 2018; Zwi et al., 2007). Yet, most single study assessments of prevention programs fail to include outcome measures of abuse disclosure (Davis & Gidycz, 2000; Walsh et al., 2018; Zwi et al., 2007). Of the few assessments of prevention programs that do include abuse disclosure as an outcome, there are methodological limitations of the disclosure criterion that limit the generalizability of such results. Indeed, disclosure is often assessed not directly but rather indirectly as a measure of children's intentions to disclose hypothetical abuse. Still, such indirect measures reveal promising outcomes, generally linking prevention programs with increased intentions to disclose hypothetical abuse (e.g., Kenny, Wurtele, & Alonso, 2012; Wurtele, Hughes, & Owens, 1998).

At least two studies assessed children's disclosures of actual prior abuse immediately after participating in a prevention program (comparing their disclosure rates to a control group of children). These studies yielded mixed results, with one study finding no effect of prevention program on abuse disclosure (null effects likely stemming from a small sample size; Zhang et al., 2014), and the other revealing elevated rates of disclosure among children exposed to the prevention program (Oldfield, Hays, & Megel, 1996). Yet, these two studies are also limited methodologically, reflecting only assessments of prior abuse experiences occurring before prevention program exposure, rather than a longitudinal analysis of the effects of prevention program on disclosure of future abuse victimization. In sum, there are few studies that assess prevention programs'

effects on disclosure rates, those that exist are typically methodological limited (i.e., assess only disclosures of future actual abuse), and the results are somewhat mixed. Even so, there appears to be some promising, tentative evidence that prevention programs might be associated with increased disclosure rates (e.g., Finkelhor, Asdigian, & Dziuba-Leatherman, 1995; for a review see Finkelhor, 2007). Thus, in the present research, we provide a much needed assessment of the effects of a prevention program on subsequent disclosure rates of actual (not hypothetical) future abuse. We expect to find that children exposed to an abuse prevention program (Think First and Stay Safe™ [TFSS]) will be more likely to disclose future abuse experiences compared to children not exposed to the program.

### Effects of Abuse Prevention Programs on Abuse Prevention and Substantiation

Another crucial limitation of prevention program assessments to date has been their inability to provide clear and convincing evidence that such programs reduce abuse rates. Such a limitation stems largely from practical methodological challenges associated with assessing this research question, and (in turn) because few single study program assessments include subsequent abuse rates as an assessment outcome (Davis & Gidycz, 2000; Walsh et al., 2018; Zwi et al., 2007). Moreover, two studies revealed that children who participated in abuse prevention programs were no less likely than those who had not to later be sexually abused (Bolen, 2003; Finkelhor et al., 1995). These two studies have been touted by critics of abuse prevention programs as evidence that such programs ought not be deployed, given that they are ineffective at abuse prevention (Finkelhor, 2007). Yet, as Finkelhor (2007) has argued, such criticisms are unfounded because there are a variety of reasons why those studies failed to detect effects of abuse decline, including, notably, that Finkelhor, Asdigian, and Dziuba-Leatherman's (1995) prevention program enhanced abuse disclosure rates, which in turn could have driven *increased* abuse substantiation. That is, abuse that would have otherwise gone undisclosed, uninvestigated, and unsubstantiated was subsequently more likely to come to light, contributing to artificially elevated abuse rates. To the extent that abuse prevention programs facilitate abuse disclosure (and research suggests they likely do), abuse disclosure may prevent continued victimization by initiating an investigation, which may facilitate an abuse substantiation and, in turn, the incapacitation of the perpetrator. In support, abuse disclosure has emerged as a significant predictor of abuse substantiation (e.g., Haskett et al., 1995)—a finding that is not surprising given that child sexual abuse is, by nature, a private crime, often with little material evidence, and frequently hinges on the testimony (disclosure) of a child. Without a child's disclosure of abuse, there may be little to no evidence to substantiate it.

Surprisingly, no research to date has explored the role of abuse prevention programs on abuse substantiation rates.

Exploring this research question helps address the elusive question regarding whether prevention programs reduce abuse rates. To the extent that substantiated abuse facilitates the implementation of necessary treatment and services, as well as effective prosecutions and incarceration of perpetrators (Heger, Tison, Velasquez, & Bernier, 2002), abuse rates ought to decline as substantiation rates increase. Thus, in the present research, we explore the possibility that an abuse prevention program (TFSS) facilitates elevated future disclosure of abuse, which in turn drives increased abuse substantiation rates.

## Study Overview and Hypotheses

A children's advocacy center (CAC), which handles every child forensic interview for alleged child abuse in a Midwestern community, has implemented a novel child sexual abuse prevention program in community public and private schools, TFSS (Child Lures Ltd.; Wooden, Webb, & Mitchell, 2013). This program teaches children to recognize signs of potentially dangerous situations and provides tips designed to facilitate safety, including encouraging children to recognize and disclose abuse. Because this CAC conducts every child forensic interview for alleged child sexual abuse and also keeps records of which children were versus were not exposed to the TFSS program and subsequent abuse substantiation for each case, we are well positioned to conduct archival data analysis, employing a quasi-experimental design. Specifically, we empirically test the hypothesis that child exposure to the prevention program predicts increased rates of child disclosure of abuse during the CAC-conducted forensic interview, a more valid assessment of disclosure than children's self-reported intentions to disclose hypothetical abuse, and an important methodological extension of studies that assess only disclosure of past abuse, immediately following the prevention program. Moreover, no research to date has explored the potential role of child sexual abuse prevention programs on legal abuse substantiation. Yet because disclosure enhances substantiation rates (e.g., Haskett et al., 1995; Malloy et al., 2007), we expect that abuse disclosure will statistically mediate the effect of the TFSS program exposure on substantiation rates. We also explore additional predictors of abuse disclosure that we had access to in the present data set, including child gender, child age, child relationship to perpetrator, and length of time between alleged abuse and forensic interview. Indeed, prior research has revealed that girls (rather than boys; e.g., DiPietro, Runyan, & Fredrickson, 1997; Lippert, Cross, Jones, & Walsh, 2009), older (rather than younger) children (e.g., Lippert et al., 2009), and children abused by strangers (rather than closer familial relations; e.g., Leclerc & Wortley, 2015) are more likely to disclose in forensic interviews. We expect similar effects to emerge in the present research, but we also expect that our proposed mediation model will hold even after controlling for these variables because they are not confounded with the prevention program implementation.

## Method

### Participants

Between 2016 and 2018, 416 children from a Midwestern community received forensic interviews within their local CAC (81% girls,  $M_{\text{age}} = 10.4$ , age range = 2–17, 73% White, 10% Black, 12% Biracial, 3% Hispanic, 2% Asian). Of those 416 children, researchers verified that 319 children either did ( $n = 82$ ) or did not ( $n = 237$ ) attend a school that administered the TFSS program. The remaining 97 children were excluded from data analysis because researchers could not determine with certainty that they were or were not exposed to the TFSS program, typically because it was not clear what school the child was attending prior to the CAC forensic interview. Of all forensic interviews, the vast majority (98%) reflected sexual abuse investigations, and the remaining few forensic interviews included physical abuse ( $n = 3$ ), neglect ( $n = 2$ ), or witness to a crime ( $n = 2$ ).

### TFSS Program

The TFSS program first began being implemented in select schools ( $N = 3$  of schools in the first year of implementation) in five neighboring counties in Southern Indiana in the fall of 2009, expanding to more schools every subsequent year, reaching a total of 66 of schools in 2018. Thus, the length of time in between prevention program exposure and forensic interview among the children in the present data set ranged from 0 to 9 years. The TFSS program was originally developed by Child Lures Prevention Ltd. in 1984. This school-based prevention program teaches elementary-aged students how to recognize unsafe behaviors and situations that are commonly used by sexual predators and also to recognize other types of abusive behavior (i.e., physical abuse, emotional abuse). The program emphasizes that anyone can perpetrate sexual abuse, but that it is most commonly perpetrated by a known person, family member, or peer. The program's primary focus is to teach children how to avoid abusive situations (sexual and physical), while also empowering children who have experienced abuse to report to a trusted adult. This multiple session program is based upon the research of Wooden (2018). Some children are exposed to the program more than 1 year because it is a program that varies in content depending on the age of the children receiving it. That is, the program is altered in ways that are developmentally appropriate for older children. For instance, for kindergartners and first graders, the information is presented in a shorter format and mature, sexual abuse-related language is not yet introduced. For children in third grade through sixth grade, the curriculum becomes a little longer, includes peer role-playing, information about common lures used by perpetrators, and more sexual abuse-relevant language.

### Child Forensic Interview and Abuse Disclosure

Abuse was suspected because of a child's disclosure, an adult's suspicion, or other evidence, which is in turn reported to the

Department of Child Services (DCS) or law enforcement. Per the CAC's protocol, only law enforcement or DCS staff members are permitted to schedule a formal forensic interview. Prior to scheduling the interview, law enforcement or DCS must review the merits of the alleged incident by meeting with the child and conducting an initial assessment of the allegations to determine a need for a full forensic interview. In so doing, they interact with the child to determine whether the child has the cognitive ability to participate in a formal forensic interview. Only if it is clear from this interaction the child will likely disclose (because the child has provided signs of informal disclosure), will the child be invited for a formal forensic interview. A nationally certified, full-time child forensic interviewer stationed at the local CAC conducted approximately 95% of the child forensic interviews in the data set and the remaining few were conducted by trained detectives within the local police and sheriff's office. All child forensic interviewers were trained in and used the ChildFirst Forensic Interview Protocol (Gundersen National Child Training Protection Center, 2019). Moreover, all forensic interviewers were blind to which children had versus had not participated in the prevention program and blind to the hypotheses of the present research. Specifically, the interviewers were trained to approach each interview in a nonleading, nonsuggestive, developmentally appropriate way such that it minimizes potential trauma associated with disclosing abuse. The interview is approached in a neutral and unbiased manner, is designed to have forensic value, and to be legally defensible in court. Disclosure of abuse during the child forensic interview was determined by the interviewer. For a child to receive a code of "disclosure," the child must have disclosed any meaningful utterance or full and detailed account of the abuse experienced in such a way that could be substantiated as an abuse disclosure in the state of Indiana. A child received a "nondisclosure" code if they said no abuse occurred. In addition, if the child did not explicitly say no abuse occurred, but rather refused to discuss it, by saying something like "something happened, but I won't talk about it," the child received a "nondisclosure" code. Of the 319 children included in analyses, 68% disclosed abuse during the forensic interview, and 32% did not disclose abuse during the forensic interview. These forensic interview disclosure rates fall within the range (in fact, near the median) of such rates published in previous studies (for a review, see London, Bruck, Ceci, & Shuman, 2007).

### Abuse Substantiation

Abuse substantiation reflects the Indiana Department of Child Services standards, which relies on a preponderance of the evidence standard (certainty above 51%) in substantiation determinations. Thus, when the Indiana Department of Child Services officially determined that the alleged abuse was substantiated or determined it to be unsubstantiated, after reviewing the totality of the evidence, we coded the abuse dichotomously as *substantiated* (1) or as *unsubstantiated* (0), respectively. Note that some cases in the data set include

outcomes that are unknown because they were not shared with the CAC ( $n = 73$ ). In turn, the abuse substantiation variable includes some missing data, but analyses for this variable have sufficient power to detect meaningful effects, nonetheless. We know of no reason why cases with unknown determinations would be any different in nature than cases with known determinations. That is, high caseloads and large turnover rates in DCS appear to explain why they do not always share case outcomes with us. Even so, we tested the extent to which child demographic factors (gender and age) covaried with whether or not determinations were known. There was no relationship between child gender and whether or not case determinations were known,  $\chi^2(1) = 1.561, p = .211$ . There was, however, an unexpected albeit significant effect on child age such that children with unknown determinations were older ( $M = 10.44, SD = 3.98$ ) than children with known determination ( $M = 9.06, SD = 4.03$ ),  $F = 6.68, p = .01, \eta^2 = .02$ . Yet the effect size was relatively small, as shown by the small mean difference in child age. Even so, it is worth mentioning that, only for analyses reported below that include case determinations as a dependent variable, results reflect a slightly smaller and slightly younger child sample.

### Child Relationship to Perpetrator

We coded the child's relationship to the perpetrator in such a way that higher numbers reflect a less close and familiar relationship. Specifically, we assigned the value of 1 to abuse perpetrated by an immediate family member (e.g., father or boyfriend), 2 to extended family members (e.g., uncle, grandfather), 3 to close family friends, 4 to an acquaintance, and 5 to a stranger.

### Length of Time In Between Alleged Abuse and Forensic Interview

We coded the length of time in between the alleged abuse (based on the child's report of when the abuse took place) and when the forensic interview occurred in such a way that higher numbers reflect a greater amount of time. Specifically, we assigned the value of 1 to a time interval ranging from 0 to 1 months, 2 to a time interval ranging from 2 to 6 months, 3 to a time interval of 7–12 months, 4 to a time interval ranging from 13 to 60 months, and 5 to a time interval that ranges from 61 to the maximum value in our data set (144 months). We categorized this variable (rather than leaving it as a continuous variable) due to its skewness (2.047) and kurtosis (4.211), which was attenuated upon categorization (skewness = .389; kurtosis = -1.316).

## Results

We first present preliminary analyses, followed by our primary analyses, which include a logistic regression and  $\chi^2$  test for independence, analyzing the direct effect of exposure to the TFSS program on the dichotomous variable of abuse

disclosure. We next conducted mediation analyses testing whether abuse disclosure significantly mediates the relationship between TFSS program on abuse substantiation.

### Preliminary Analyses Exploring Demographic and Case-Related Predictors of Abuse Disclosure

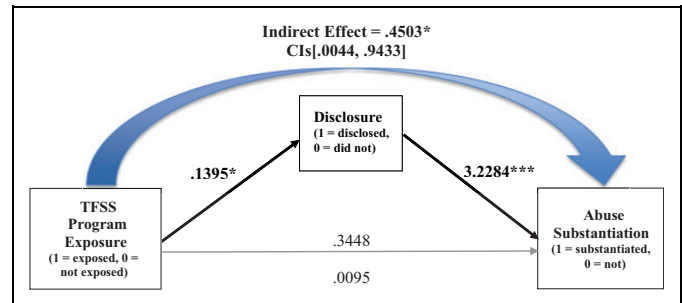
As expected, girls were significantly more likely to disclose the abuse than boys,  $B = .706$ ,  $SE = .287$ ,  $Wald = 6.078$ ,  $p = .014$ ,  $OR = 2.027$ , 95% CIs [1.156, 3.554], older children were more likely to disclose abuse than younger children,  $B = .222$ ,  $SE = .035$ ,  $Wald = 39.027$ ,  $p = .000$ ,  $OR = 1.248$ , 95% CIs [1.164, 1.338], and children abused by strangers were more likely to disclose abuse than children abused by immediate family members,  $B = .207$ ,  $SE = .101$ ,  $Wald = 4.126$ ,  $p = .040$ ,  $OR = 1.230$ , 95% CIs [1.009, 1.498]. There was, however, no relationship between length of time in between the alleged abuse and the forensic interview and abuse disclosure likelihood,  $B = .171$ ,  $SE = .207$ ,  $Wald = .685$ ,  $p = .408$ ,  $OR = 1.187$ , 95% CIs [0.791, 1.781].

### Effect of TFSS Program on Abuse Disclosure

Supporting hypotheses, children exposed to the TFSS program were significantly more likely to disclose abuse during the forensic interview than children not exposed to the program,  $B = .60$ ,  $SE = .259$ ,  $Wald = 4.128$ ,  $p = .042$ ,  $OR = 1.820$ , 95% CIs [1.021, 3.245]. A  $\chi^2$  test for independence confirms this effect,  $\chi^2(1) = 4.20$ ,  $p = .041$ ,  $\Phi = .115$ ,  $p = .041$ , revealing that the proportion of children who disclosed abuse during the forensic interview was greater among children exposed to the TFSS program than among children not exposed to the program. Specifically, of the 82 children exposed to the TFSS program, 77% ( $n = 63$ ) disclosed the abuse, and 23% ( $n = 19$ ) did not disclose the abuse during the forensic interview. Of the 237 children not exposed to the TFSS program, 64.6% ( $n = 153$ ) disclosed the abuse, and 35.4% ( $n = 84$ ) did not disclose the abuse during the forensic interview.

### Effect of Abuse Disclosure on Substantiation

As expected, abuse disclosure significantly predicted abuse substantiation,  $B = 3.23$ ,  $SE = .429$ ,  $Wald = 56.756$ ,  $p = .000$ ,  $OR = 25.266$ , 95% CIs [10.906, 58.535]. A  $\chi^2$  test for independence confirms this effect,  $\chi^2(1) = 84.144$ ,  $p = .000$ ,  $\Phi = .580$ ,  $p = .000$ , revealing that the proportion of children whose abuse was substantiated was far greater among children who disclosed than among children who did not disclose. Specifically, of the 161 children who disclosed, 68% ( $n = 110$ ) of their cases were substantiated, and 31% ( $n = 51$ ) of their cases were not substantiated. In contrast, of the 89 children who did not disclose, only 8% ( $n = 7$ ) of their cases were substantiated, and 92% ( $n = 82$ ) of their cases were not substantiated.



**Figure 1.** A mediation analysis illustrating the relationship between the Think First and Stay Safe™ (TFSS) program exposure on abuse substantiation likelihood, as mediated by abuse disclosure. Unstandardized coefficients appear adjacent to their respective paths. The bold and curved lines reflect the significant indirect effect. Although the gray line is included in the model, it is not part of the significant indirect effect. The value appearing directly above the gray line reflects the total effect of TFSS program exposure on abuse substantiation and the value appearing below the gray line reflects the direct effect. \* $p = .05$ . \*\*\* $p < .001$ .

### Abuse Disclosure as a Mediator of TFSS Program on Substantiation

Next, we employed nonparametric bootstrapping analyses to test whether abuse disclosure significantly mediates the relationship between the TFSS program and abuse substantiation (Preacher & Hayes, 2004; Preacher, Rucker, & Hayes, 2007).<sup>1</sup> Mediation is evident when the 95% bias-corrected and accelerated confidence intervals for the indirect effect (IE) do not include 0 (Preacher & Hayes, 2004).

Results based on 5,000 bootstrapped samples revealed that the total effect (TE) of the TFSS program on abuse substantiation was not significant (TE = .3448,  $SE = .2971$ ,  $z = 1.1608$ ,  $p = .2457$ ), and the direct effect (DE) was not significant (DE = .0095,  $SE = .3555$ ,  $z = .0266$ ,  $p = .9788$ ). Yet, as expected, elevated disclosure rates significantly mediated the effect of the TFSS program on abuse substantiation, IE = .4503,  $SE = .2392$ , 95% CIs [0.0044, 0.9433]. See Figure 1 for model. Next, we replicated this mediation analysis including all demographic and case-related variables (i.e., child age, child gender, child relationship to perpetrator, and length of time in between alleged abuse and forensic interview) as covariates in the mediation model. There were no differences in results (i.e., the IE was still statistically significant), IE = .1646,  $SE = .2863$ , 95% CIs [0.0136, 0.4627].

## Discussion

The present research reflects a novel assessment of the TFSS abuse prevention program, revealing that exposure to the program predicts significantly increased abuse disclosure likelihood, which in turn predicts elevated abuse substantiation rates. We found that children exposed to a child sexual abuse education program were more likely to disclose abuse incidents during a forensic interview as opposed to children who did not participate in the program. We also found that child gender, age, and relationship to the perpetrator predicted abuse

disclosure rates. Moreover, our mediation model held even after including these additional variables as covariates, as we expected given that the abuse prevention program did not covary with these additional variables.

Such research provides enhanced clarity when it comes to the effects of abuse prevention programs on abuse disclosure and added insight regarding their potential to prevent abuse. Many abuse prevention program studies fail to include measures of disclosure (Davis & Gidycz, 2000; Walsh et al., 2018; Zwi et al., 2007), those that do often assess intention to disclose hypothetical abuse (e.g., Kenny et al., 2012; Wurtele et al., 1998), or prior abuse experiences occurring before the prevention program and assessed in its immediate aftermath (Oldfield et al., 1996; Zhang et al., 2014). The paucity and methodological limitations of research examining effects of abuse prevention programs on disclosure have given way to criticisms of abuse prevention programs, broadly, and calls that they not be used (for a review, see Finkelhor, 2007). The present research not only assesses the effects of an abuse prevention program on disclosure but does so in ways that are distinct from other studies, assessing actual abuse disclosure as a criterion (rather than intention to disclose hypothetical abuse). Moreover, although our study lacks random assignment of children to abuse prevention versus control conditions, limiting arguments for causality, our quasi-experimental design allows us to examine disclosures of future abuse experiences occurring after—in many cases, years after—exposure to the prevention program. Thus, the results of the present study suggest that the effects of exposure to an abuse prevention program may not be transient or limited merely to the immediate aftermath of program exposure.

### Implications of Findings

Our research bolsters Finkelhor's (2007) arguments that abuse prevention programs have value, particularly when it comes to enhanced abuse disclosure, and ought not to be dismissed due to a failure to detect clear effects associated with reduced abuse rates, broadly. Not only are there methodological reasons that research obscures real rates of abuse declines stemming from prevention programs, but there are also myriad, well-documented benefits associated with abuse prevention programs. These benefits include not only enhanced disclosure rates but also a diminished likelihood that children blame themselves for the abuse they experienced (Finkelhor et al., 1995)—a finding that ought not be overlooked, given the potential for self-blame to negatively impact children psychologically (Finkelhor, 2007). Moreover, there is tentative evidence that abuse prevention programs might diminish abuse rates, generally. Indeed, Gibson and Leitenberg (2000) found that women who had participated in a school prevention program as children were 2 times less likely to have experienced child sexual abuse compared to women who did not participate in a program as a child. Of course, more research is required to ascertain the extent to which prevention programs effectively prevent abuse.

Notably, staff at the local CAC who processed all forensic interviews analyzed in this research had suspected that their

implementation of the TFSS program within their five southern Indiana counties had diminished child abuse rates in their region. In support, although CACs in the state of Indiana have experienced a recent increase in children served due to sexual abuse allegations (682 more in 2017 than in 2016; Indiana CACs, 2018), the CAC involved in the present research has not experienced a comparable uptick. In fact, this local CAC has experienced a recent *decline* in rates of child forensic interviews (28 fewer in 2017 than in 2018)—a finding that might stem from their ever-increasing, community-wide efforts to implement the TFSS prevention program in public and private schools across the five counties that they serve. In support, a primary distinction between the local CAC involved in the present research, versus state-wide Indiana CACs, is that it had implemented the TFSS prevention program in local schools, and the other Indiana CACs have not implemented a comparable program as broadly in the counties that they serve.

The present research is also timely with respect to its policy implications. As of 2017, the Indiana General Assembly passed legislation mandating schools to incorporate abuse prevention programs into their curriculum by July 1, 2018 (Senate Enrolled Act 355, 2017), though state budgets have not allocated funds to support this legislative mandate. This study provides some tentative evidence that such funds might be a sound investment with the potential to protect children by reducing abuse, which in turn could reduce the myriad state-incurred economic costs associated with child sexual abuse (Fang et al., 2012), ultimately paying for itself.

### Limitations and Future Research

Our quasi-experimental design is, of course, not without limitations. We are reluctant to make causal claims regarding the effects of the prevention program on assessed outcomes because children were not randomly assigned to conditions. Future research should employ a true experimental methodological design to address this limitation. Even so, an obvious alternative explanation for this abuse program's effect is not clear. Because some schools implemented the program and others did not, one possibility is that children at the schools that happened to not implement the program come from demographic backgrounds that place them at greater risk of child sexual abuse victimization than children from participating schools. Such an explanation, however, seems unlikely given that child sexual abuse does not appear to vary as a function of socioeconomic class or ethnicity (Krug et al., 2002; Martyniuk & Dworkin, 2011; Pereda et al., 2009). More tellingly, school type was not a confound in the present research for several reasons. First, the program was implemented at various schools in certain, specific grades. In addition, the prevention program was rolled out to more and more local schools over time (from 2013 to 2018). Thus, it is possible that some children in the data set attended the same school at a time point when that school did versus did not provide the program.

Moreover, some readers might be concerned about another potential confound—abuse disclosure *prior* to the forensic

interview. That is, is it possible that program exposure increased disclosure rates prior to the forensic interview, which in turn ultimately drove elevated forensic interview disclosure rates? Fortunately, our data set controls for this possible confound because it reflects only children who have already disclosed abuse prior to the forensic interview, either formally or informally. In fact, this CAC's protocol stipulates that law enforcement or DCS staff members must first review the merits of an alleged abuse incident by meeting with the child and conducting an initial assessment of the allegations to determine the need for a full forensic interview. In so doing, they interact with the child to determine whether the child has the cognitive ability to participate in the forensic interview. Only if it is clear from this interaction that the child will likely disclose (because they have made an informal disclosure), will the child be invited for a formal forensic interview. Thus, our data reflect only children who have already disclosed abuse prior to the forensic interview. In turn, prior abuse disclosure cannot be confounded with program exposure in this data set.

Another related possible limitation of the present research is that we examined effects of a prevention program on abuse disclosure only among children who received a child forensic interview. It is, therefore, unclear whether the prevention program enhances less formal abuse disclosures, which may occur outside of the context of formal forensic interviews. Still, the present methodological approach (restricting analyses to only children receiving forensic interviews) provides a nice control for the possibility that the prevention program contributed to an overall decline in abuse prevalence—an effect that has the potential to mask otherwise real effects of the prevention program on elevated disclosure rates. That is, if the program caused an actual reduction in sexual abuse prevalence, it would likely be associated with diminished overall abuse allegations/suspicions, which may be accompanied by fewer abuse disclosures occurring outside of formal forensic interview contexts. Examining only disclosures that occurred in a formal forensic interview context (reflecting only children where abuse was alleged/suspected) helps control for this possibility. Still, future research should continue to explore the impact of the prevention program on abuse disclosures occurring outside of a forensic interview context.

Another potential limitation of our quasi-experimental design is that our coding of prevention program exposure relied on discerning which grade and school a child attended and in which year. Using this information, paired with the records retained by the local CAC of when and which grade levels they deployed the prevention program, we discerned which children were versus were not attending a school and grade that had received the prevention program. Yet, this reflects an imperfect assessment of program exposure because some children may have been absent on the day of the program or may have had parents who specifically requested that their child not participate. Indeed, all children receive parental permission forms prior to the program and are given the option to forbid their child from participating. Even so, the more convenient option for the parent is to allow their child to participate—not returning the form implies parental consent for participation (the

easier, default option). Staff from this CAC report that the opt out rate is quite low and typically reflects only one or two students per school. Still, our measure of program exposure inevitably is imperfect and contributes to random measurement error in the present study. Yet, the fact that we found statistically significant effects suggests that the random measurement error in the present research was not large enough to undermine our statistical power. In fact, if anything, the present effects likely reflect a *conservative* estimate of the prevention program's effect sizes—effects that would likely be even stronger in the absence of program participation measurement error.

Another potential concern, sometimes raised by critics of prevention programs, is that prevention programs have the potential to make children hypervigilant of possible abuse, causing children to confuse innocent adult touch as a form of abuse. That is, do our effects linking the prevention program with enhanced abuse disclosure reflect an increase in true abuse disclosures or false abuse disclosures? Fortunately, studies have not revealed evidence that children are more likely to make false claims of abuse, misinterpreting appropriate physical contact as sexual abuse, due to prevention program exposure (Blumberg, Chadwick, Fogarty, Speth, & Chadwick, 1991; Wurtele, 1993). Indeed, evidence suggests that the vast majority of abuse disclosures are real and that the more prevalent problem is children's reluctance to disclose real abuse, as opposed to fabricating abuse claims (for a review, see Lyon, 2007).

Of course, there are many additional consequences of abuse prevention programs that the present research did not assess, including child knowledge of abuse risks, self-protection skills, and self-blame. Future research should directly explore the effects of the TFSS program on these and other important outcome variables, employing a methodologically rigorous true experimental design.

## Conclusion

The present research speaks to empirical and policy debates surrounding the utility of abuse prevention programs, broadly, and specifically with respect to the potential of the TFSS program to reduce abuse. What we have found is that the present prevention program, indeed, predicted enhanced abuse disclosure rates, which in turn predicted greater abuse substantiation rates. These data, of course, reflect real children. After the completion of this research, the forensic interviewer involved in the present research recounted several firsthand interactions with children who stated point blank that it was not until the TFSS program came to their school that they realized they were being abused and felt compelled to disclose. These interactions may reflect child empowerment to disclose abuse, stemming from enhanced knowledge of what constitutes abuse. Moreover, these child statements, albeit anecdotal, are consistent with other research revealing that more than half of children's reasons for disclosing abuse involved an external circumstance, such as being shown an educational video about child sexual abuse (Malloy, Brubacher, & Lamb, 2013). Of course, there remain myriad pressures for children to suppress abuse



disclosures, often stemming from the possibility that such disclosures will disrupt familial relationships, be stigmatizing, or unbelievably and ignored by trusted adults (Arata, 1998; Browne & Finkelhor, 1986; Goodman-Brown, Edelstein, Goodman, Jones, & Gordon, 2003; Sauzier, 1989; Sjöberg & Lindblad, 2002). More work is necessary to ensure that all abuse is disclosed and investigated. Important next steps include educating parents and caregivers about abuse risks and potential abusers so that they can reinforce the information children receive from prevention programs—initiatives currently being explored by this local CAC. Efforts to prevent child sexual abuse have the potential to go a long way toward protecting children from various forms of trauma associated with abuse—efforts that will help bolster the psychological, mental, and physical well-being of a future generation of adults and caregivers.

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### Note

1. Because all children in the present data set made prior informal disclosures of abuse before being invited to the formal forensic interview (a prerequisite for the forensic interview), it is not possible for prior abuse disclosure to be confounded with program exposure in our data set.

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