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Knowledge gains from the implementation of a child sexual abuse prevention program and the future of school-based prevention education

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Abstract

School-based child sexual abuse (CSA) programs effectively increase students' CSA-related knowledge. This study focuses on an implementation trial of *Safe Touches*, an empirically supported, school-based CSA prevention program, that was disrupted by the COVID-19 pandemic. We sought to demonstrate gains in CSA-related knowledge following *Safe Touches*, but were limited to a pre-post design. A total of 2,210 students across five counties in a Mid-Atlantic state received the *Safe Touches* workshop between September 2019 and March 2020. McNemar's chi-square test was used to assess changes in proportion of correct responses pre-workshop (Time 1) and one-week post-workshop (Time 2). Students' CSA-related knowledge increased significantly based on changes in mean CSA knowledge scores and the number of correct item-level responses assessed at Time 1 and Time 2 ($p<.000$). Leveraging the experience of the facilitators' who delivered these workshops prior to the disruption of implementation, we gathered facilitators' perspectives to explore the viability of offering *Safe Touches* virtually. In July 2020, sixteen facilitators completed an electronic survey designed to understand the viability of a virtual *Safe Touches* workshop. Three themes emerged from facilitator feedback on virtual programming: student engagement concerns, handling disclosures, and technology access to a virtual program. The findings of this study indicate that the *Safe Touches* workshop significantly increased CSA related knowledge and, overall, facilitators supported further exploration and development of a virtual *Safe Touches* workshop. The transition of empirically supported school-based CSA prevention programs to a virtual delivery modality is necessary to maintain an effective means of primary prevention and opportunity for disclosure.

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IRB Approval: All procedures were approved by the Pennsylvania State University Institutional Review Board.

Keywords

child sexual abuse; virtual delivery; school-based prevention; intervention; COVID-19

Child sexual abuse (CSA) is a subtype of child maltreatment affecting a conservative estimate of 60,000 children in the U.S. annually (U.S. Department of Health & Human Services, 2023); an estimated 20 – 26% of girls and 5 – 8% of boys are victims of CSA prior to 18 (Finkelhor et al., 2014; Fix et al., 2019). Associated with life-long biopsychosocial consequences (Bebbington et al., 2009; Dube et al., 2005; Molnar et al., 2001; Noll, 2021; Noll et al., 2018) and a lifetime economic burden estimated to exceed $9.3 billion (Letourneau et al., 2018), the prevention of CSA is a public health priority. Since the 1980s, school-based CSA prevention programs have proliferated as the prevailing primary prevention strategy in the US; indeed, retrospective surveys of university students indicate approximately 62% had attended a school-based CSA prevention program (Gibson & Leitenberg, 2000; Kenny et al., 2020). School-based programs focus on strengthening children's knowledge and increasing use of preventive strategies (Finkelhor, 2009). Several programs have demonstrated effectiveness in increasing knowledge and self-protection skills among elementary aged students (Bustamante et al., 2019; Gubbels et al., 2021; Miller-Perrin & Wurtele, 1988; Tutty, 1997; Tutty et al., 2020; Walsh et al., 2018; Wurtele & Owens, 1997). Additionally, children's participation in these educational programs has been linked to disclosures of ongoing or prior abuse (Finkelhor, 2007; Gibson & Leitenberg, 2000). Disclosures may contribute to the process of stopping abusive situations and aligning children with necessary services. Despite the demonstrated effectiveness of school-based programs, they are reliant on an existing implementation infrastructure (the school). Thus, when schools are closed CSA prevention programs are not able to reach children who may benefit from the knowledge provided and, moreover, an opportunity to disclose abuse to a safe adult is eliminated.

School-based CSA prevention

Schools are a successful intervention point for a number of child-focused preventive education programs including alcohol and substance abuse (Foxcroft & Tsertsvadze, 2011; Lize et al., 2017), mental health (Corrieri et al., 2013), bullying (Huang et al., 2019), safe sexual practices (Petrova & Garcia-Retamero, 2015), and violence (Gavine et al., 2016) or delinquent behavior prevention programming (Payne et al., 2006). Schools are a particularly important point of intervention for CSA-related programming (i.e., body safety training; Wurtele, 2009). School-based prevention programs target improving children's CSA-related knowledge (i.e., not safe touches) and self-protection skills (i.e., tell a trusted adult; Gubbels et al., 2021). When children have the knowledge to discern unsafe situations, they are more likely to be assertive and less compliant with perpetrators (Ko & Cosden, 2001). Importantly, programs do not put the onus on the child to protect themselves; instead, school-based programs encourage children to disclose potential abuse to trusted adults. School-based workshops can normalize disclosure processes and provide the environment to support disclosures (Baker et al., 2013; Blakey et al., 2019; Elfreich et al., 2020). Since the majority of disclosures do not happen in childhood when the abuse occurs (Hébert et al.,

2009; London et al., 2005), programs that can encourage disclosure more proximal to the event may provide a means for earlier preventive interventions.

Schools offer an important implementation infrastructure for prevention education programs (Gubbels et al., 2021). First, generally as an institution, schools reinforce societal values, norms, and acceptable behaviors (Sloboda, 2018), such as the body safety rule of personal space. Second, schools have continued contact with children and families for multiple years (Miller-Perrin & Wurtele, 1988), allowing for consistent messaging or programming, as well as the opportunity to notice changes in affect or behavior. Third, school-based programs may be delivered to all enrolled students (i.e., universal prevention) thereby minimizing any potential stigma associated with the topic (Lynas & Hawkins, 2017). Schools create a unique and effective environment for the dissemination and implementation of child-focused CSA primary prevention programs (Collin-Vézina et al., 2013). Indeed, a number of such programs have demonstrated a significant increase in child CSA-related knowledge (Davis & Gidycz, 2000; Topping & Barron, 2009; Walsh et al., 2018; Zwi et al., 2007), including *Safe Touches: Personal Safety Training for Children* (henceforth, *Safe Touches* (Pulido et al., 2015).

Safe Touches.

Developed by The New York Society for the Prevention of Cruelty to Children (NYSPCC), *Safe Touches* is delivered in a singular 50-minute workshop in which children learn to identify private parts of the body, the difference between safe and not-safe touches, and the distinction between secrets and surprises (Holloway & Pulido, 2018). Racially diverse puppets facilitate children's learning and practice of four body safety steps throughout the workshop to: 'trust their feelings,' 'try to say no', 'try to walk away,' and 'tell an adult'. This wording is intentional to convey the purpose of the workshop: to help children identify what is a not safe touch (i.e., sexual abuse) so that they can tell trusted adults, not necessarily to stop abuse in progress. The workshop emphasizes that the child is not to blame. In call and response, children repeat 'it is never the child's fault' multiple times and facilitators reiterate that 'it is adults' responsibility to keep children safe.' Following the workshop, each child receives an activity book to take home and complete with caregivers.

Delivered in classrooms by two facilitators, the *Safe Touches* workshop is rated evidence-based by the California Evidence-Based Clearinghouse (https://www.cebc4cw.org/program/safe-touches/). The seminal cluster randomized trial demonstrated a significant increase in children's knowledge of CSA concepts among 437 children in second and third grade classrooms (typically ages 7–8 and 8–9, respectively) in New York City which were randomized to receive the *Safe Touches* workshop or services as usual (Pulido et al., 2015). The greatest gains were observed among second graders compared to third graders. Gains among those who received *Safe Touches* were maintained at one-month post-workshop (Holloway & Pulido, 2018). A study designed to examine the long-term retention of knowledge among second grade students found that students not only significantly improved their knowledge, but also these gains were maintained at 6- and 12-months post-workshop (Guastaferro et al., 2023).

The Current Study

Motivated by the paucity of financial or legislative support for universal school-based CSA prevention programming, a Mid-Atlantic state government initiated a CSA prevention strategy supporting the widescale implementation of *Safe Touches*. One goal of the implementation-focused, longitudinal study was to replicate the impact of *Safe Touches* on CSA-related knowledge among second graders as demonstrated in the trial demonstrating the evidence-base for the program (Pulido et al., 2015). The *Safe Touches* workshops were scheduled in second grade classrooms in all public elementary schools across five counties between Fall 2019 and Spring 2020. However, the COVID-19 pandemic and corresponding school closures in 2020 eliminated this infrastructure thereby precluding the ability to implement the program and the planned long-term follow-up assessment. We leveraged the unplanned interruption to solicit input from the providers who had delivered the in-person workshop, to explore potential interest and reactions to offering the program in a virtual format.

In this paper, we first present the replication of quantitative findings supporting the effectiveness of *Safe Touches* by examining the change in CSA-related awareness among students who received the workshop in the Fall of 2019 or before March 2020 using a pretest-posttest design. Then, as an exploratory aim, we collected facilitator feedback on the potential use of a virtual platform to deliver *Safe Touches*. We believe these findings presented together here may be useful to those interested in developing future iterations of school-based programming, specifically with regard to virtual delivery options, to maximize pathways by which children may receive these prevention education messages and to minimize disruptions in program delivery when alternative strategies can be employed.

Method: Replication of Knowledge Gains

Participants

The university-based research team provided *Safe Touches* facilitators with a flyer to be sent home to parents/guardians with an overview of the workshop and notifying them that their child's classroom would soon receive the workshop. These materials were sent at the school's discretion – some sent at the beginning of the school year, others in the weeks preceding the workshop. Facilitators provided an estimated count of students in each classroom where they delivered the workshop. Across the school districts in the 5 participating counties, an estimated 5,144 students in 246 classrooms received the workshop between September 2019 and March 2020. Parent permission to participate in the workshop was distinct from permission to participate in the research (i.e., surveys) that accompanied the workshop. Students with parent permission were invited to participate (assent), resulting in a final analytic sample of $N = 2{,}210$. The students were almost evenly split among females (49.7%) and males (50.3%) and the average age was 7.2 ($SD = .45$). The majority of students did not provide their race or ethnicity (66.1%); of the 749 children who did report race or ethnicity, the majority were White (76.6%).

Procedures

The study used a longitudinal cohort pretest-posttest design. Parents provided permission for the student to participate in the research and students who had parental permission provided verbal assent prior to the first assessment. Students completed assessments via paper-and-pencil pre-workshop (Time 1; ~1 week prior to workshop) and immediately post-workshop (Time 2; ~1 week following Time 1). All students were eligible to participate in the *Safe Touches* workshop (see Guastaferro et al., 2023, for full description of survey procedures). Students that did not have permission or declined to participate in the research completed an alternative activity supervised by the teacher. The number of students who did not have parent permission to participate in the workshop is unknown as the workshop was distinct from research participation. All students received a university-branded pencil. All procedures were approved by the University Institutional Review Board.

Measures

The primary outcome of interest was student's CSA-related knowledge as measured by six questions adapted from the Children's Knowledge of Abuse Questionnaire (CKAQ; Tutty, 1995). Students answered questions on three-point scale (0 = false, 1 = neither true nor false, 2 = true). Items 1 and 5 were re-coded such that higher scores indicated a greater level of knowledge. The current analysis summarizes the percentage of students answering individual items correctly, with responses of 'neither true nor false' and incorrect responses each treated as incorrect. A total score was generated by summing the individual item responses to generate a score from 0 to 6. In addition to the CKAQ, students provided basic demographic information including gender and age.

The number of disclosures made to facilitators during the workshop or research procedures was collected by the research team. A disclosure is operationalized here to be any statement made by a child warranting a report to the statewide reporting hotline.

Analytic Plan

Statistical analyses on child data were conducted using SPSS version 26 (IBM Corp., 2019). Of the 2,210 students that participated in the research, there was missing data on 11.7% of the assessments at Time 1 (n = 1,561) and 11.3% missing at Time 2 (n =1,504). Multiple imputation was selected to handle missing data using a fully conditional specification Markov Chain Monte Carlo with auxiliary variables (main effect and categorical predictors) and predictive mean matching was used with 100 imputations on the item-level responses. We conducted a paired-sample t-test to compare changes in CKAQ total score from Time 1 to Time 2, and conducted McNemar's chi-square tests, a non-parametric test of change used when data have a non-normal distribution (Adedokun & Burgess, 2012), to assess significance of changes in proportion of correct responses to CKAQ items for students for Time 1 and Time 2.

Results: Students' CSA-related Knowledge

There was a significant difference in means on the total score between Time 1 (M = .55, SD = .21) and Time 2 (M = .72, SD = .21) at the group level (t(2209) = 5.43, p<.000)

as well as on all individual items. Table 1 indicates the proportion of students answering each item correctly at Time 1 and Time 2. The largest gain was observed on Item 5, on which students indicated they did not always have to keep secrets (+28.4%). Other sizable increases in the proportion of students answering correctly after the workshop were observed on Item 2 (i.e., "You can trust your feelings about whether a touch is good or bad.") and Item 6 (i.e., "Someone you know, even a relative, might want to touch your private parts in a way that feels confusing"), an increase of nearly 26% and 21%, respectively. Item 4 (i.e., 'A pat on the back from a teacher you like after you have done a good job at school is a safe touch.') had the lowest observed gain in those who answered correctly following the workshop (2.3%). Though there was still a significant change from Time 1 to Time 2, it is important to note that Items 3 and 4 began with a higher positive endorsement rate at baseline suggesting that students likely knew the correct answer prior to receiving the workshop. Notably, a total of 15 disclosures were made to the facilitators by students during or immediately following the *Safe Touches* workshop. No adverse events were reported during the course of implementation.

Exploring the Viability of Virtual Programming

Whereas other child maltreatment prevention programs, especially parent-focused, were able to pivot to virtual platforms including telehealth systems at the height of the COVID-19 pandemic (Garcia et al., 2021; Marshall et al., 2020; Self-Brown et al., 2020; Williams et al., 2021), few — if any — school-based CSA-prevention programs were prepared for and able to make this transition. As a result, an untold number of students did not receive CSA prevention programming, and lost a viable opportunity to disclose abuse to a trusted adult. The COVID-19 pandemic highlighted the need for the development of virtually delivered child-focused CSA prevention programming, however the need is not specific to COVID-19. Virtually delivered programming, if effective, could expand the reach of school-based programming and potentially improve cost-effectiveness. It is our intent that these perspectives be useful in the development of virtual school-based CSA-prevention programs.

Method

Facilitators, hired as prevention educators from an organization outside the school (i.e., victim service agency), delivered workshops between September 2019 and March 2020. In July 2020 the *Safe Touches* facilitators ($N = 23$) were invited to participate in an anonymous survey designed to (1) understand how the COVID-19 pandemic impacted facilitators and (2) inform the development of a virtual *Safe Touches*. Facilitators were sent an invitation to participate in an anonymous short survey administered via REDCap (Harris et al., 2009). Initiating the survey signified consent in research procedures. Following the initial email invitation from the study team, facilitators received up to two additional automated reminders. Facilitators were compensated with a $50 e-gift card for their participation.

The facilitator survey included basic demographic information (e.g., age, gender, race, educational background). Likert-scale and open response items were included to ascertain the impact of COVID-19 on staff capacity to carry out their job (0=no effect, 1=hours

reduced, 2=effort reallocated, 3=furloughed, 4=other) and staff level of confidence delivering *Safe Touches* in a virtual format (1=Not at all confident, 2=Only a little confident, 3=In between, 4=Somewhat confident, 5=Very confident). In an open response field, providers shared their general thoughts, reactions, and suggestions for delivering *Safe Touches* in a virtual format.

Facilitator responses are presented descriptively and open-ended questions were coded thematically by two members of the research team using qualitative coding. Following methods as outlined by Saldaña (2013), two coders independently read the responses and then following a recursive process of joint discussion and independent coding, themes were refined and applied.

Results: Facilitator Perspectives on Virtual Delivery

A total of 16 facilitators (70%) participated, representing all five participating counties. The mean age of facilitators was 37 (SD = 12.96), and participants identified predominantly as female (88%), White (94%), and working full time (75%). Facilitators reported varied impacts of COVID-19 on their jobs in July 2020. Three reported no effect, three reported their effort was reallocated, four providers were furloughed, and the remaining six providers indicated other (e.g., left facilitator job previously). Facilitators had mixed levels of confidence at the prospect of delivering *Safe Touches* virtually (M = 3.47; SD = 1.12). The majority (n = 9) reported feeling somewhat to very confident. One provider enthusiastically responded: "*I would love to try it*." Whereas another suggested virtual was "*not ideal, however, I do believe the children would still be interested in the puppet presentation and the information provided is vital*!"

Facilitator perspectives about the possibility of delivering *Safe Touches* in a virtual format were coded into three general categories. Exemplar quotes across these three categories are depicted in Table 2. First, facilitators expressed general concern about student engagement in the virtual format: "*I feel that virtual formats always lack that personal interaction, the connection with individual students*." Another provider said: "*I don't think that 2nd graders would do well looking at a screen with strangers instead of interacting in person*." To address issues of engagement, one facilitator suggested: "*I would do smaller groups of kids, it would be easier to interact with them*." At least one facilitator expressed school districts' interest in a virtually delivered program: "*We have schools that are interested in having this program in the 2020/2021 school year whether it is virtually or in-person*."

Second, the logistics of disclosures was of concern to several facilitators. For example, one facilitator shared: "*If kids are at home, there would not be an easy way to talk privately with that student and they may be at home with a perpetrator that might make them more reluctant to speak up*." Another facilitator suggested the importance of other adults (i.e., teachers or counselors) in the potential virtual session: "*When we are in person presenting the program the other adults in the room are present but often working on something else. The adults would have to be committed to the lesson and interact. In some cases, we would not be able to see all the students to call on for questions, etc*."

Third, facilitators expressed concern over access to virtual platforms. The availability of technology and access to internet varied between and within counties. One facilitator shared: "*Some kids, if they're at home, may not have access to the internet, or may not have supervision necessary to engage healthily or effectively with a live broadcast*." This facilitator went on to suggest "*If we switch to a virtual model, it could only be equitable if it were broadcast into a classroom in session*." Another facilitator also shared initial thoughts about the structure of a potential virtual program: "*I was thinking of recording the puppet scenes and having one educator live in between the scenes to debrief with the students just as the script does*." No facilitator responses indicated that they would be entirely opposed to virtual implementation of the *Safe Touches* curriculum.

Discussion

Findings indicate a significant increase in CSA-related knowledge following the in-person *Safe Touches* workshop as expected by previous research (Holloway & Pulido, 2018; Pulido et al., 2015; Guastaferro et al, 2023). Though the total gains between the questions had a wide range (i.e., 2.3% to 28.4% depending on the item), overall students gained important CSA-related prevention knowledge. The 15 disclosures leading to a report to the statewide hotline confirms prior work indicating school-based CSA prevention programs facilitates disclosures (Finkelhor, 2007; Gibson & Leitenberg, 2000). The outcomes of those disclosures is not known, but indicate the supportive environment of the workshop in which students made a disclosure they may not have made otherwise (Baker et al., 2013; Blakey et al., 2019; Elfreich et al., 2020). Creating the space for students to make disclosures to safe adults might be considered as much of a public health priority as increasing their CSA-related knowledge.

School closures were an important mitigation strategy at the height of the COVID-19 pandemic, but the impact of the COVID-19 pandemic on the prevalence of CSA has yet to be fully understood. Though throughout the Fall of 2020 the majority of elementary schools were able to offer a virtual platform providing the opportunity for remote education, the lack of available virtual CSA prevention programs eliminated the delivery of school-based prevention programs to children. School closures and the reliance on virtual platforms is not limited to situations such as the COVID-19 pandemic and the need to flexibly offer educational programming virtually will not cease at the conclusion of the pandemic. Thus, there is a burgeoning need for virtually available school-based CSA-prevention programs. The facilitators of the in-person *Safe Touches* workshop expressed concerns related to child engagement, process of handling disclosures, and accessibility of a virtually delivered program. It is important to recognize that facilitator responses were collected in July 2020, when the transition to virtual programs was still fairly unfamiliar and intimidating. Of course, unique limitations to implementation must be addressed such as optimal delivery platforms, availability of adequate videoconferencing equipment, reliable technology, technological literacy, and confidential spaces (Gurwitch et al., 2020; Marshall et al., 2020; Racine et al., 2020). However, other child maltreatment prevention programs have effectively made the transition to virtual platforms (Garcia et al., 2021; Marshall et al., 2020; Self-Brown et al., 2020; Williams et al., 2021). Future research should examine the efficacy of school-based CSA prevention programs when delivered in a virtual platform and

ultimately compare the effectiveness of in-person to virtual programming. Including student feedback in the adaptation of these programs to a virtual delivery may be useful in informing strategies to assist with (or maximize) their virtual learning.

The results of our implementation trial disrupted by COVID-19, though encouraging, are not without limitation. Though the effectiveness of *Safe Touches* has previously been established, the lack of a comparison group in this pre-posttest design precludes the ability to conclude if the observed gains were causally linked to the receipt of the workshop. Related, the lack of longitudinal assessment data limits the ability to conclude that students retained knowledge over time as described in prior research (Holloway & Pulido, 2018; Pulido et al., 2015). This study adds to the body of literature in support of *Safe Touches* by analyzing data at the item-level. This may be useful for refining curriculum content or presentation in the future. It is also unknown what type of CSA-related preventive education, and to what degree, students received prior to participating in the *Safe Touches* workshop. It is possible that prior knowledge created a ceiling effect on observed knowledge gains.

School-based programs have long been the prevailing prevention strategy in the U.S. and many programs have demonstrated effectiveness. Results presented here add to the evidence-base of *Safe Touches* – after receiving the workshop, second grade students had increased knowledge of CSA prevention and successfully disclosed 15 potentially abusive situations to facilitators. The disruption to implementation plans highlights the importance of developing virtual delivery options for school-based CSA prevention programs. Equally important, however, is the expansion of implementation infrastructure and education policy to ensure that all students have access to preventive education workshops, such as *Safe Touches.*

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Table 1.

Percent of correct responses on CSA knowledge questionnaire pre- and post-implementation (N = 2,210).

CSA Knowledge Questions	Time 1	Time 2	Δ Time 1 – Time 2
1. You have to let grown-ups touch you whether you like it or not.[+]	48.0	57.7	9.7***
2. You can trust your feelings about whether a touch is good or bad.	57.5	83.3	25.8***
3. It's OK to say "No" and move away if someone touches you in a way you don't like.	75.7	87.8	12.1***
4. A pat on the back from a teacher you like after you have done a good job at school is a safe touch.	80.7	83.0	2.3*
5. You always have to keep secrets.[+]	50.2	78.6	28.4***
6. Someone you know, even a relative, might want to touch your private parts in a way that feels confusing.	20.1	41.0	20.9***

KEY:

[+] item was reversed coded.

* p<.05,

*** p<.001

NOTE: McNemar tests were used to determine change in percent of correct responses between Time 1 and Time 2.

Table 2.

Exemplar quotes from the facilitator survey about a potential virtual delivery of Safe Touches

Theme	Exemplar Quote(s)
Engagement	"I worry about the interaction and creating a space where a child could ask questions. It would also depend if these children were at home receiving the program or in a classroom with facilitators coming in virtually."
	"I think the virtual component lacks interaction/engagement. Unless we could use Zoom and enable students to ask questions throughout. The other consideration is understanding that students will likely be instructed virtually all day every day. That can be overbearing."
	"In some ways the puppets would be more believable. I also think teachers and day care providers would welcome an addition like Safe Touches to an online learning environment. I think that it would be HIGHLY important to get the message to children who are confined without the usual safe people to rely on."
Disclosures	"How can we get accurate information when parents are around if parents are abusers? My main concern is giving a message to a world we can't see or interact with like we could in person. Kids might misunderstand something with no one there to explain. Kids also already have some ideas about what we talk about and it is important to have a presence that is dissolving our stereotypes and shame around this topic. Being an authoritative voice that corrects harmful misunderstandings is really important to the success of this program for second graders as they grow up with this knowledge."
Access	"We have a wide and diverse range of technology access in [our] County."
	"It was easy to schedule this because superintendents agreed to it far in advance. This made it easy for principals and teachers to comply with the requests to schedule. Without this it can be difficult for schools to schedule in person and we have fought for minimum time to present to students. The concern is if schools have modified schedules they are already stretched for time and keeping students up with their own content let alone a program from outsiders."