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Initial Assessment of *Stewards of Children* Program Effects on Child Sexual Abuse Reporting Rates in Selected South Carolina Counties

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Abstract

Child sexual abuse (CSA) prevention programs often include a focus on increased reporting of suspected abuse, in addition to other prevention components such as helping trainees recognize suspected abusive situations. This study aimed to determine whether the Stewards of Children prevention program is associated with increased CSA reporting. Analyses examined whether rates of CSA allegations increased over time in three counties in South Carolina (SC) targeted with program dissemination efforts and whether CSA reporting trends differed between the three targeted counties and three comparison counties that did not experience substantial program dissemination. CSA allegation data were obtained by county and year for predissemination and postdissemination periods from the SC Department of Social Services. Results indicated that, for the targeted counties but not the nontargeted counties, estimated allegation rates increased significantly over time, corresponding with the onset of significant program dissemination efforts. Results also indicated significant between-groups differences in allegation trends for targeted versus nontargeted counties. These findings suggest that the Stewards prevention intervention may be associated with increased CSA allegations. However, results require replication with randomization of counties. Moreover, whether increased reporting is associated with decreased CSA incidence remains unknown.

Keywords

child sexual abuse; prevention; GLM

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Rates of child sexual abuse (CSA) have been on the decline since 1990 (Finkelhor & Jones, 2006). However, CSA remains a prevalent and serious threat faced by children, with recent U.S. estimates of lifetime prevalence of exposure to CSA by age 18 at 10.7% to 17.4% for girls and 3.8% to 4.6% for boys (Townsend & Rheingold, 2013). Given the prevalence of CSA, it is not surprising that many prevention programs have been developed over the decades (Baker, 2005). Child-focused efforts traditionally targeted so-called “no-go-tell” behaviors, which include teaching children to recognize, resist, and report inappropriate requests or behaviors (Ko & Cosden, 2001; Wurtele, 2009). Adult-focused efforts are often aimed at raising awareness of CSA, helping adults recognize and interrupt potentially abusive situations and encouraging adults to limit the exposure of children to such situations by, for example, limiting unsupervised time between older and younger children (Ko & Cosden, 2001; Wurtele, 2009). A common objective of CSA prevention programs is to encourage increased reporting of suspected abuse (Ko & Cosden, 2001; Prescott, Plummer, & Davis, 2010). Child-centered CSA prevention programs have been found to increase reporting by victims (Ko & Cosden, 2001). Whether adult-centered CSA prevention programs also increase reporting remains unclear, and additional research is warranted.

The present study begins to address this gap by estimating the effect of one specific prevention program on reporting of suspected CSA. The Stewards of Children (Stewards) program focuses on shifting adults' knowledge, attitudes, and behaviors related to CSA and provides education to prevent, recognize, and react responsibly to CSA. Stewards includes specific information on when and how to report suspected CSA. A prior randomized control trial ($N = 352$) indicated that Stewards training was associated with increased knowledge about CSA, reduced myths/stereotypes about CSA, and increased use of preventative behaviors (Rheingold et al., 2015). There was, however, no significant between-groups difference for the specific preventative behavior of “reporting CSA to the authorities” (Rheingold et al., 2015). CSA reporting events are relatively rare, and differences in reporting rates may be difficult to detect in the context of an intervention trial. The present study extends this research by using CSA allegation rates in six counties in South Carolina (SC) across an 11-year time period to evaluate (1) whether allegation rates increased over time within counties targeted by Stewards' dissemination efforts and (2) whether trends in CSA allegation rates differed between targeted and nontargeted counties.

Methods

Selected Counties

Early Stewards dissemination focused on Charleston County, where Darkness to Light (the developers of Stewards) is headquartered, and two contiguous counties, Berkeley and Dorchester (CBD). The present study leveraged these efforts to evaluate program effects on the detection of CSA using the proxy measure of CSA allegation reports. Specifically, data on CSA allegation rates were obtained from six SC counties. These included the three targeted CBD counties and three comparison counties: Greenville, Laurens, and Pickens counties (GLP). These comparison counties were selected because they had not been targeted by Darkness to Light's dissemination efforts during the study time period and because they were geographically remote from the targeted counties, reducing the likelihood

of contamination. Moreover, like the targeted counties, the nontargeted GLP counties were contiguous and comprised of one large and two smaller counties similar in terms of population (see Table 1 for additional descriptive information on the six counties). At the time of prevention dissemination efforts, the GLP and CBD counties were similar in terms of violent crime rates, which ranged from 47.8 to 91.0 for the CBD counties and from 35.4 to 83.2 for the GLB counties (SC Department of Public Safety, Statistical Analysis Center, 2008).

Although Stewards dissemination efforts began in 2006, the actual number of Stewards trainings increased dramatically in 2008, aided by the decision of all three CBD county school superintendents to mandate educator trainings and by a Department of Health and Human Services (DHHS) grant awarded to Darkness to Light that specifically supported educator trainings. Details from DHHS grant reports support our decisions to designate 2000–2007 as a "predissemination" period and to qualify the GLP counties as "nontargeted." Briefly, among 11,918 educator trainees (who comprised one-third of all adult trainees in the six counties and for whom the most complete information was available), just 907 (7.6%) completed training prior to 2008 and just 659 (5.5%) resided in the nontargeted GLP counties. The majority of trainings occurred in a single 2.5-hour session to groups of 25 trainees or less; all Stewards content was delivered via a standardized video, and discussion was facilitated by trainers who completed an 8-hour credentialing class (C. Townsend, personal communication, May 18, 2015).

Operational Definitions

Allegations—The annual number of CSA allegations (regardless of ultimate finding) for each county from 2000 through 2012 was obtained from the SC Department of Social Services.

Allegations per 10,000 children—To standardize the raw allegation data, they were converted into number of allegations per 10,000 children for each county. First, the number of people living in each county during each year was obtained as was the proportion of children living in SC who were <18 years old in 2000 and 2010 (SC Revenue and Fiscal Affairs Office, n. d.). In the second step, linear interpolation was used to estimate year-specific proportions of children <18 years old within each county. In the third step, these proportions were multiplied by the county year-specific Census estimates to obtain estimates of the numbers of children <18 years old in each county for each year. The final step involved calculating the number of events (allegations) per 10,000 children in each county for each year. County-specific estimated events per <10,000 children, and the year-specific numbers of events and population sample size estimates are provided in Table 2.

Analytic Strategy

As noted earlier, two questions of interest were addressed including (1) did allegation rates within the targeted counties increase from pre- versus postdissemination time periods? (within-county comparisons) and (2) did trends in allegation rates between targeted and nontargeted counties differ during the postdissemination period? (between-county comparisons).

Within-county comparison—General linear mixed (GLM) regression models were estimated to test for within-county differences. These models treated the event (allegation) rate as the dependent variable, with year and Year × County Grouping interaction as the independent variables of interest. The models also used a linear spline with 1 knot, which allowed the slope of the lines to change (if warranted) starting in year 2008. Analyses accounted for the fact that measurements within counties were correlated with one another. All analyses were conducted using SAS v9.3 PROC MIXED.

Between-county comparison—To examine whether allegation rates differed between targeted and nontargeted counties during the postdissemination time period, we again estimated GLM regression models to test whether the trend line slope for the targeted counties was significantly different from the trend line slope for nontargeted counties during the 2008–2012 time period. This model treated the event (allegations) as the dependent variable, with year, county grouping, and Year × County Grouping interaction as the independent variables.

Results

As can be seen in Table 2, the number of “raw” CSA allegations varied between counties across the 13-year period of interest, ranging from just 20 reports in 2001 in the smallest county (Laurens) to 358 reports in 2002 in the largest county (Greenville). Even within counties, the number of reports varied, resulting in estimated reports per 10,000 children that sometimes doubled over time (e.g., from an estimated rate of 7.3 to 14.1 in Charleston County between 2003 and 2012). Variation declined when counties were combined to reflect targeted versus nontargeted groupings. Thus, the estimated annual rates ranged from 16.5 to 26.6 per 10,000 children for targeted and 23.9 to 33.0 per 10,000 children for nontargeted counties. Reporting rates in 2000 (baseline) were not significantly different ($p = .77$) between the targeted and the nontargeted county groups.

Within-Group Comparisons

The targeted CBD counties experienced a shift from a decreasing allegation trend to an increasing allegation trend over time, and this shift appears to start in 2008. The GLM results (Table 3) indicated that this shift was statistically significant ($p = .006$). Specifically, the slope of the predissemination period (slope = −0.63 events per 10,000 children per year) was detectibly different from the slope of the postdissemination period (slope = +1.67 events per 10,000 children per year). By comparison, the nontargeted counties' pre- and postdissemination period slopes were not statistically significantly different and, in fact, declined over time (pre: 0.32; post: −0.68; $p = .22$).

Between-Group Comparison

Results indicate that the allegation rates of the targeted versus nontargeted counties differed in the postdissemination time period, increasing for the targeted group and decreasing for the nontargeted group. The postdissemination shift in targeted versus nontargeted allegation trends was significant ($p = .005$; see Table 3, Spline Component # 2 analysis).

Discussion

This study sought to evaluate the effects of the Stewards prevention program on CSA allegations. Specifically, we compared the pre- and postdissemination period rates of CSA allegations within counties whose adult citizens were provided numerous opportunities to complete the Stewards program. We also compared allegation trends between those targeted counties and comparison nontargeted counties. Results suggest that prevention training may be associated with a reporting effect. Thus, allegation rates increased over time for the targeted counties, with a significant change in the slope of the reporting trend lines from pre- to postdissemination time periods. A similar change was not detected between the pre- and postdissemination period for the nontargeted counties. Likewise, the increasing trend in the postdissemination reporting rates for the targeted counties differed significantly from the decreasing trend seen in the nontargeted counties.

To our knowledge, this is the first study examining the impact of CSA prevention efforts on adult reporting rates, and results provide preliminary evidence that educational programs such as Stewards may impact potential preventative behaviors (i.e., reporting behavior). If brief adult-focused CSA prevention strategies such as Stewards do, in fact, increase reporting, they may potentially reduce risk of future CSA events. These are noteworthy findings in that a fairly brief intervention widely disseminated could play an important public health role by increasing the detection and reporting of suspected CSA. Few randomized controlled trials or other rigorous evaluations have been conducted with adult-focused CSA prevention programming (Letourneau, Eaton, Bass, Berlin, & Moore, 2014). Investing in such research of CSA prevention efforts could have significant public health implications in potentially decreasing CSA and its associated long-term negative outcomes.

These results, while encouraging, are merely suggestive and must be considered in light of several limitations. First, in the absence of random assignment of counties to dissemination efforts, we are unable to assign causality to the prevention program. A related limitation is that differences between counties (e.g., with respect to citizen race, education, and income) might have accounted for some of the variance in CSA reporting over time. Moreover, other factors (e.g., the fact that Darkness to Light has advertised in the CBD area) may have influenced reporting beyond that of formal training dissemination efforts. Future research efforts should include randomization of counties to intervention arms and should move beyond the home state of the prevention organization. Second, future research should also include evaluation of allegations of other types of abuse and neglect, as this would help determine whether any detected changes were specific to CSA allegations (as would be expected based on a specialized training such as Stewards) or reflected broader shifts in child abuse and neglect reporting trends. Third, there was wide variation in reporting rates between and within counties. In SC, there was a change in how reports were categorized, and this change may have affected the number of allegations recorded between 2003 and 2007 (J. Shakelford, Director of Knowledge, Management and Practice Standards, SC Department of Social Services, personal communication, October 14, 2014). However, as this was a statewide policy change, there is no reason to expect that the change differentially affected targeted versus nontargeted counties. Of greater relevance, the raw number of allegations was typically small at the county-by-year level, and simple random variation

likely played a role in the variability we witnessed in this study. Future studies based on larger and potentially more stable reporting rates would help address this limitation.

One goal of Stewards, and many adult-focused CSA prevention programs, is to increase the reporting of suspected abuse, and the present findings suggest that this program may have such an effect. However, this finding does not bear on whether or not Stewards is associated with the actual prevention of CSA. If the additional allegations are credible and result in the identification and effective management of persons who are sexually abusing children or who might do so, we would expect to see increased reporting followed, eventually, by declining CSA rates. If, however, additional reports are not credible and/or do not result in the more effective identification and management of offenders, then they will not be associated with rates of CSA. Determining whether any intervention is associated with a true preventive effect is a needed and necessary next step in the evaluation of CSA prevention programs.

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Table 1

Descriptive Information by SC County.

	Targeted counties			Nontargeted counties		
Measure	**Charleston**	**Berkeley**	**Dorchester**	**Greenville**	**Pickens**	**Laurens**
Population, 2013 estimate	372,803	194,020	145,397	474,266	119,829	66,229
Gender (% female), 2013	51.6	50.0	51.2	51.4	50.2	51.5
Race/ethnicity						
% White, non-Hispanic	63.1	64.2	65.0	69.5	86.6	68.4
% Black	20.0	25.0	26.0	18.5	6.8	25.9
% Hispanic	5.2	6.1	4.7	8.7	3.4	4.2
Education (persons ≥ 25 years)						
% High school graduate or higher	87.8	86.2	88.9	85.3	82.3	77.1
% Bachelor's degree or higher	38.4	20.5	24.2	30.9	23.0	14.4
Economics (2008–2012)						
Median household income	US$50,289	US$51,476	US$54,912	US$48,438	US$41,947	US$38,829
% Persons below poverty	17.7	14.3	11.4	15.2	18.4	20.0
Persons per square mile	382.3	161.8	238.2	785.1	240.0	93.2

Note. Source for all estimates except violent crime rate: State & County QuickFacts at http://quickfacts.census.gov/qfd/states/45000.html. Race/ethnicity does not include extreme minority categories and therefore does not sum to 100%.

Table 2

Child Sexual Abuse Allegations by Year and County.

County	Measure	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Charleston	Population <I8 yrs	78112	78530	78932	79319	79690	80047	80388	80713	81024	81319	81599	81863	82113
	Total events	113	126	92	58	94	86	63	72	101	100	114	120	116
	Events per 10,000 children	14.5	16.0	11.7	7.3	11.8	10.7	7.8	8.9	12.5	12.3	14.0	14.7	14.1
Berkeley	Population <I8 yrs	35948	36557	37153	37735	38304	38860	39402	39931	40447	40949	41437	41913	42375
	Total events	149	192	181	185	166	141	196	134	160	182	184	173	196
	Events per 10,000 children	41.4	52.5	48.7	49.0	43.3	36.3	49.7	33.6	39.6	44.4	44.4	41.3	46.3
Dorchester	Population <I8 yrs	24296	25117	25922	26713	27488	28247	28992	29721	30435	31134	31817	32486	33139
	Total events	46	47	42	62	61	58	56	42	54	51	67	51	108
	Events per 10,000 children	18.9	18.7	16.2	23.2	22.2	20.5	19.3	14.1	17.7	16.4	21.1	15.7	32.6
CBD	Events per 10,000 children	22.3	26.0	22.2	21.2	22.1	19.4	21.2	16.5	20.7	21.7	23.6	22.0	26.6
Greenville	Population <I8 yrs	95663	96733	97775	98791	99779	100739	101673	102579	103459	104311	105135	105933	106703
	Total events	283	305	358	313	324	254	286	331	293	310	312	305	294
	Events per 10,000 children	29.6	31.5	36.6	31.7	32.5	25.2	28.1	32.3	28.3	29.7	29.7	28.8	27.6
Laurens	Population <I8 yrs	17531	17323	171 16	16910	16706	16503	16300	16099	15899	15701	15503	15307	15111
	Total events	25	20	24	28	24	27	45	39	44	45	31	44	28
	Events per 10,000 children	14.3	11.5	14.0	16.6	14.4	16.4	27.6	24.2	27.7	28.7	20.0	28.7	18.5
Pickens	Population <I8 yrs	27911	27912	27910	27905	27897	27885	27870	27852	27831	27807	27779	27748	27714
	Total events	29	48	65	84	88	86	68	113	85	68	72	77	82
	Events per 10,000 children	10.4	17.2	23.3	30.1	31.5	30.8	24.4	40.6	30.5	24.5	25.9	27.7	29.6
GLP	Events per 10,000 children	23.9	26.3	31.3	29.6	30.2	25.3	27.4	33.0	28.7	28.6	28.0	28.6	27.0

Note. CBD = Charleston, Berkeley and Dorchester counties, combined; GLP = Greenville, Laurens, and Pickens counties, combined.

Table 3

Results of the General Linear Mixed Model.

Effect	Estimate	*SE*	*df*	*t* value	*p* value
Intercept	27.3385	7.0280	4	3.89	.018
Year-2000	0.3215	0.2834	68	1.13	.26
Spline component #1: year > 2008	−1.0052	0.8096	68	−1.24	.22
County group: CBD (GLP is the reference group)	−3.0624	9.9388	4	−0.31	.77
Spline component #2: county grouping × year ≥ 2008	3.3023	1.1449	68	2.88	.005
County group slopes					
CBD: Predissemination	−0.6317	0.2834	68	−2.23	
CBD: Postdissemination	1.6655	0.6129	68	2.72	.006 *
GLP: Predissemination	0.3215	0.2834	68	1.13	
GLP: Postdissemination	−0.6837	0.6129	68	−1.12	.22 *

Note. CBD refers to Charleston, Dorchester and Berkeley counties; GLP refers to Greenville, Lauren, and Pickens counties.

*Compared to the predissemination county group.