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Abstract

Nearly half of 5- to 17-year-olds have experienced trauma in the form of at-school victimization. Exposure to trauma increases students' risk for mental health disorders and school failure. This study reviews at-school victimization in middle and high school students and associated health outcomes that may negatively impact academic outcomes. Analyzing the California Healthy Kids Survey 2010, we examine rates of victimization on school grounds, substance use, and symptoms of depression and eating disorders among a sample of 6th to 12th graders ($N = 639,925$). Between 20% and 50% of students had experienced at least one type of victimizing event on school grounds, with the highest incidence in middle schools. A significantly higher share of victimized students reported using substances, symptoms of depression and eating disorders when compared to nonvictimized students. School district investment in school nurses, social workers, and school-based health centers could increase preventive interventions to improve school climate, student well-being, and academic success.

Keywords

mental health, victimization, substance use, child and adolescent, school-based health services

Exposure to chronic childhood trauma significantly increases the risk for development of mental health disorders and poor academic outcomes (Mathews, Dempsey, & Overstreet, 2009; Porche, Fortuna, & Alegria, 2011; Voisin, Hunnicutt, & Neilands, 2011). Approximately 80% of children 2–17 years old in the United States have experienced childhood trauma in the form of victimization (Turner, Finkelhor, & Ormrod, 2010), with the most common locations in schools (54%) or in the home (44%; Turner, Shattuck, Finkelhor, & Hamby, 2016). Types of victimization include exposure to bullying, community violence, sibling abuse, physical abuse or assault, property damage, witnessing family violence, maltreatment, and sexual victimization or assault (Turner et al., 2010). Higher rates of victimization disproportionately affect children and adolescents in low-income households, of racial and ethnic minorities, with low parental education, and/or living with single parents or stepparents (Turner, Finkelhor, & Ormrod, 2006).

Exposure to chronic childhood trauma is of national concern because it negatively impacts social and academic functioning with detrimental effects on educational, employment, and social mobility opportunities that can lead to morbidity and early death (Cohen, 2006; Marshall, Galea, Wood, & Kerr, 2013; Merikangas et al., 2010). Children and adolescents who have been exposed to chronic childhood trauma are at higher risk of developing a mental health

disorder with subsequent poor academic achievement (Busby, Lambert, & Ialongo, 2013; Porche et al., 2011; Slade & Wissow, 2007; Voisin et al., 2011). Urban elementary and high school students exposed to community violence exhibit increased symptoms of depression, anxiety, and aggression and have lower academic outcomes (Busby

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et al., 2013; Slade & Wissow, 2007; Voisin et al., 2011). School achievement and the level of education completed affect a person's occupation, where they live, and ability to accumulate wealth (Fiscella & Kitzman, 2009; Freudenberg & Ruglis, 2007; Haas & Fosse, 2008), and thus poor school performance decreases the ability to escape the cycle of exposure to chronic trauma (Rich et al., 2010). Children and adolescents need services to address the sequelae of trauma, but nearly 70% of children and adolescents with mental health disorders are not able to access mental health care (Merikangas et al., 2010, 2011).

The purpose of this study was to review at-school victimization in middle and high school students and the associated health outcomes that may negatively impact academic outcomes. We analyzed the California Healthy Kids Survey (CHKS) 2010, which provided extensive data on rates of victimization on school grounds, substance use, and symptoms of depression and eating disorders. In 2010, the California public high school graduation rate was roughly 74% (California Department of Education [CDE], 2016), and school failure in the form of dropout was 18%, with 30% of African American and 25% of Latino students dropping out (The Education Trust, 2011). Presented are the results and discussion of implications for service, research, and policy provision to address the achievement gap in California and to guide future analyses and policy planning nationwide.

Method

Research Design

We conducted a descriptive, secondary analysis of deidentified cross-sectional data from the 2010 CHKS Core Module. Permission to conduct the study was obtained from the University of California San Francisco's Committee on Human Research, and permission to utilize the CHKS database was obtained from WestEd, a national nonpartisan, nonprofit service agency that works with the CDE to develop and field the CHKS surveys.

Data

We analyzed the Core Module of the CHKS. The CHKS was designed by the CDE and incorporates elements of the Centers for Disease Control's Youth Risk Behavior Survey (YRBS) to survey risky behavior, resiliency, and protective factors among students (CDE, 2014). The CHKS Core Module is a survey that queries middle school and high school students about their school campus experiences and their behaviors and attitudes toward alcohol, cigarette, and drug use. The 132-item survey asks questions about demographics, grades, school connectedness, substance use, and exposure to various forms of victimizing events that occur on school property. The survey also includes items related to symptoms of depression and eating disorders.

Some key differences between the CHKS and the YRBS are that the CHKS Core Module does not include items related to a student's height, weight, if they rode a bike or motorbike, if they seriously considered suicide, how many times they attempted suicide, how they obtained cigarettes, students' eating patterns (juice, soda, fruit, vegetables), or use of screen time. These items are available in different modules. The middle school Core Module does not include 10 items that are in the high school version that asks questions regarding "hard" drug use (cocaine, methamphetamine, Ritalin, cough/cold medicine, ecstasy, diet pills, and prescription pain medications, such as OxyContin). All other items are the same or nearly identical. The anonymous CHKS Core Module student self-report survey is administered to 5th, 7th, 9th, and 11th graders (CDE, 2014). Schools that received funding under the federal Safe and Drug Free Schools and Communities Act (SDFSCA) or the state Tobacco Use Prevention Education (TUPE) programs were required to administer the CHKS at least once every 2 years (Austin, Bates, & Duerr, 2005). From 2003 to 2010, approximately 7,000 schools from 900 districts participated in CHKS (Austin, 2013). Grants were awarded annually so participation varied from year to year. Due to reductions in funding for the SDFSCA program, school participation in the biannual Core Module declined.

This study utilized the 2010 Core Module that surveyed 729,626 students. The final item of the survey asks the student how truthfully they answered the questions. Students were excluded from this analysis if they indicated they had only answered some or hardly any of the questions honestly. The survey had an "other" grade, marked by 492 (0.1%) students. Without an explanation of what other grade would be and with such a low frequency of occurrence, these students were removed from the analysis. The final analytic data set for this study included 639,925 students.

Data Analyses

To organize and summarize victimizing events, data from the CHKS survey were analyzed using descriptive statistics and students were grouped into 6th to 8th grade, 9th to 10th grade, and 11th to 12th grade. These ages were based on the natural clustering of ages in the raw data as the majority of students were 12 years old (22%), 14 years old (23%), or 16 years old (21%). The age-groups were also based on research related to social, physical, and cognitive development in early adolescence and late teens (Arnett, 2000; Eccles et al., 1993). Survey items of initiation of drug use asked the students their age of first use of drug and not grade of onset. Therefore, to summarize exposure to victimizing event at school and rate of substance use, descriptive statistics were used and students were grouped into ages 12 years and younger, ages 13–14 years, and ages 15 years and older.

Experiences of victimizing events were reported as to whether they had occurred on school property 0 times, 1 time,

2–3 times, or 4 or more times. These were dichotomized to “ever experienced” and “never experienced.” Similarly, lifetime and past 30-day use of illicit substances were transformed into dichotomous variables, measuring “ever used” versus “never used.” While these transformations results in some loss of information (MacCallum, Zhang, Preacher, & Rucker, 2002), they simplify the analysis and interpretation of results given the large number of items examined in cross tabulations. Data were analyzed using SPSS Version 22.

Results

Student Demographics

Table 1 presents the general demographics of the students. Of the 639,925 students, just over 50% were female. Approximately one third of students were 10–13 years old, nearly one third were 14–15 years old, and close to one third were 16–18 years old. Similarly, about one-third were in 6th to 8th grade, just over one-third were in 9th to 10th grade, and roughly one third were in 11th to 12th grade. Nearly 41% of the students were Hispanic or Latino/Latina, about 34% were White (Caucasian/non-Hispanic), roughly 14% were Asian, nearly 7% were African American/Black (non-Hispanic), a little over 4% were American Indian or Alaska Native, and almost 4% were Native Hawaiian or Pacific Islander. Approximately 80% of students self-reported their grades to be either As, Bs, or Cs, and around 20% self-reported their grades to be primarily Ds and Fs. Of the 302,948 students (about 47% of total sample) who answered questions pertaining to their living arrangements, just under 40% live in a home with both parents, roughly 14% in a home with one parent, a little over 2% in another relative's home, and about 2% in a home with more than one family. Around 3,000 students (less than 1%) reported living in a shelter, car, foster home, hotel, migrant housing, or on the street.

Exposure to Victimizing Events

Table 2 presents information on exposure to a variety of victimizing events that had occurred one or more times in the past 12 months on school property and subcategorized by grade level. Students in sixth to eighth grades were significantly more likely than those in other grades to report they had been pushed, slapped, or kicked at school by someone not just kidding around in the past 12 months (45%). They also were more likely to report that they were afraid of being beaten up (28%), had been in a physical fight (28%), and had mean rumors or lies spread about them (49%). Due to the large sample size, all χ^2 values were significant with p values < .001.

Levels of harassment were relatively similar among the different grade levels. Racial or ethnic harassment was highest, with approximately 17% of all students having been harassed or bullied because of their race or ethnicity. Skipping class because the student did not feel safe at school dramatically and significantly increased with grade level,

Table 1. 2010 California Healthy Kids Survey Student Demographics.

	Students (N = 639,925)	
	N	Percentage
What is your sex?		
Female	333,530	52.5
Male	301,493	47.1
What grade are you in?		
6 to 8th grade	219,634	34.3
9 to 10th grade	213,532	33.4
11 to 12th grade	206,267	32.2
Race		
African American/Black (non-Hispanic)	43,951	6.9
American Indian or Alaskan Native	28,665	4.5
Asian	88,034	13.8
Hispanic or Latino/Latina	267,655	41.8
Native Hawaiian or Pacific Islander	25,135	3.9
White (Caucasian/non-Hispanic)	219,392	34.3
Past 12 months—your grades		
A's–C's	506,582	80.7
D's–F's	121,389	19.3
Students (N = 639,925 with missing system)	336,689	
Where do you live		
A home with both parents	118,856	39.2
A home with only one parent	42,337	14.0
Other relatives home	6,434	2.1
On street, in car	872	0.3
Foster home, group care	813	0.3
Shelter	749	0.2
Hotel or motel	493	0.2
Migrant housing	426	0.1

with nearly 19% of 6th to 8th graders, around 34% of 9th to 10th graders, and just under 53% of 11th to 12th graders being absent from school due to not feeling safe in the past 12 months ($p < .001$).

Student Lifetime Use and Past 30-Day Use of Substances One or More Times

Table 3 presents rates of substance use by students in Grades 6–12. Among students who had ever used a substance in their lifetime, about 43% had one full drink of alcohol, close to 23% had used marijuana, nearly 18% had smoked a whole cigarette, and around 18% had used a cold or cough medicine to get high. For students who had used substances one or more times in the past 30 days, roughly 25% had one full drink of alcohol, nearly 14% had consumed five or more drinks of alcohol in a row in a few hours, about 12% had used marijuana, and approximately 10% had smoked one or more cigarettes.

Exposure to Victimization and Rates of Substance Use, Mental Health Disorder Symptoms, and Academic Achievement

Table 4 presents rates of alcohol, tobacco, marijuana, and other substance use among students who had been exposed

Table 2. Exposure to Victimizing Event One or More Times in the Past 12 Months on School Property by Grade Level.*

Victimizing Event	6–to 8th Grade		9 to 10th Grade		11th to 12th Grade		Total (N = 639,925)	
	N	Percentage	N	Percentage	N	Percentage	N	Percentage
Been pushed, slapped, kicked	97,671	45.2	63,406	30.1	42,035	20.6	203,226	32.2
Been afraid of being beaten up	61,124	28.2	43,980	20.9	27,616	13.5	132,793	21.0
Been in a physical fight	59,978	27.7	45,512	21.6	34,883	17.1	140,507	22.3
Had mean rumors/lies spread about you	106,741	49.3	87,284	41.5	77,355	38.0	271,544	43.0
Had sexual jokes/gestures made to you	95,801	44.3	98,210	46.7	91,702	45.0	285,874	45.3
Been made fun of because of your looks	96,108	44.5	78,829	37.5	65,198	32.0	240,258	38.1
Had your property stolen or damaged	66,780	30.8	55,977	26.6	45,754	22.4	168,610	26.7
Been offered, sold, given an illegal drug	27,712	12.8	57,091	27.1	68,737	33.8	153,738	24.4
Have you carried a gun to school	10,898	5.0	10,386	4.9	8,794	4.3	30,152	4.8
Have you carried a weapon to school	23,034	10.6	21,861	10.4	20,954	10.3	65,961	10.4
Been threatened/injured with a weapon	21,986	10.2	17,214	8.2	13,684	6.7	52,957	8.4
Harassed because of your race, ethnicity	40,233	18.6	36,476	17.3	30,327	14.9	107,108	17.0
Harassed because of your religion	21,358	9.8	19,212	9.1	16,864	8.3	57,491	9.1
Harassed because of your gender	24,200	11.2	18,771	8.9	15,946	7.8	58,964	9.3
Harassed because you are LGBT	23,315	10.8	19,045	9.1	14,258	7.0	56,676	9.0
Harassed because of a disability	12,760	5.9	10,448	5.0	8,156	4.0	31,418	5.0
Felt unsafe at school so skipped class	41,101	18.9	72,581	34.3	108,170	52.9	222,140	35.1

Note. LGBT = lesbian, gay, bisexual, transgender.

*All χ^2 values $p < .001$.

Table 3. Use of Substances in 6th- to 12th-Grade Students: Lifetime Use and Past 30 Day Use.

	Total Students (N = 639,925)	
	N	Valid (%)
Lifetime use, one or more times		
Smoked a whole cigarette	114,376	18.0
Smokeless tobacco	40,688	6.4
One full drink of alcohol	271,947	43.1
Marijuana	142,555	22.5
Inhalants	83,038	13.0
Cocaine in any form	29,295	7.1
Methamphetamines	22,179	5.3
LSD or other psychedelics	24,393	5.9
Ecstasy in any form	31,952	7.7
Heroin	12,262	3.0
Prescription pain killers	44,451	14.9
Cold or cough medicine	54,997	18.5
Diet pills	18,298	6.1
Ritalin or Adderall	15,569	5.2
Past 30 days use, one or more times		
Smoke one or more cigarettes	60,194	9.5
Use smokeless tobacco	19,564	3.1
One drink of alcohol	160,393	25.0
Drink five or more drinks of alcohol in a row	89,903	14.2
Marijuana	75,387	11.9
Inhalants	30,194	4.8

to a victimizing event. A significantly higher proportion of students exposed to at least one victimizing event had an early age of initiation of substance use. A greater proportion of students exposed to victimization had used alcohol, cigarettes,

or marijuana in the past 30 days as compared to students who had not been exposed to victimizing events. Just over one third (33%) of students who had been forced to have sex also had five or more drinks of alcohol in a few hours in the past 30 days, compared with around 18% of students who had not been forced to have sex who had five or more drinks of alcohol in a few hours in the past 30 days ($p < .001$).

Table 5 presents rates of symptoms of eating disorders and depression, as well as academic achievement, by whether students had been exposed to a victimizing event. Students who had experienced a victimizing event had significantly higher proportions of mental health symptoms ($p < .001$), including eating disorders and depression, when compared to students without exposure to a victimizing event. Victimized students also had significantly lower grades compared to students who had not been victimized ($p < .001$). In addition, a greater proportion of students who had been victimized in the form of being pushed, kicked, or slapped on school campus had in the past 30 days not eaten for 24 or more hours in order to lose weight (31% vs. 15%; $p < .001$). A greater proportion of students who had been harassed because they either were lesbian, gay, bisexual, transgender (LGBT) or thought to be LGBT had also been sad daily for 2 or more weeks and lost interest in usual activities compared to students who had not been harassed (56% vs. 28%; $p < .001$).

Discussion

Study findings revealed high rates of victimization on school grounds by students, particularly those in Grades 6 through 8 but consistently across all grades. While students across all

Table 4. Exposure to Victimizing Event at School and Rate of Substance Use.*

Substance Type	Pushed, Slapped, or Kicked				Threatened With a Weapon				Forced to Have Sex ^a			
	No (N = 428,192)		Yes (N = 203,226)		No (N = 578,996)		Yes (N = 52,957)		No (N = 11,621)		Yes (N = 1,322)	
	N	%	N	%	N	%	N	%	N	%	N	%
First drank alcohol?												
12 or younger	75,699	39.2	56,733	19.5	110,224	43.0	22,442	64.5	2,252	41.1	441	48.5
13–14	67,652	35.0	27,215	28.0	86,724	33.9	8,343	24.0	1,924	35.1	307	33.7
15 or older	49,711	25.7	7,801	14.3	59,107	23.1	3,995	11.5	1,301	23.8	162	17.8
First cigarette?												
12 or younger	41,806	42.4	31,811	58.5	58,135	45.1	15,734	64.1	1,412	44.7	332	51.6
13–14	31,592	32.0	14,786	27.2	40,693	31.5	5,862	23.9	987	31.2	185	28.8
15 or older	761	24.1	126	19.6	30,210	23.4	2,935	12.0	761	24.1	126	19.6
First used marijuana?												
12 or younger	761	28.3	197	34.6	28,874	26.5	11,172	51.5	761	28.3	197	34.6
13–14	1,038	38.6	224	39.3	44,333	40.6	7,051	32.5	1,038	38.6	224	39.3
15 or older	888	33.0	149	26.1	35,952	32.9	3,453	15.9	888	33.0	149	26.1
Past 30 days used												
Cigarettes	1,204	11.8	308	23.7	45,945	8.0	12,995	25.1	1,204	11.8	308	23.7
Binge drinking	1,872	18.2	430	33.0	71,583	12.5	16,760	32.2	1,872	18.2	430	33.0
Marijuana	1,417	13.8	365	28.0	58,522	10.2	15,393	29.6	1,417	13.8	365	28.0
Substance Type	Harassed because of race				Harassed because of gender				Harassed because LGBTQ			
	No (N = 524,382)		Yes (N = 107,108)		No (N = 578,996)		Yes (N = 52,957)		No (N = 574,336)		Yes (N = 56,676)	
	N	%	N	%	N	%	N	%	N	%	N	%
First drank alcohol?												
12 or under	101,589	43.4	31,073	55.2	114,455	44.2	18,146	57.2	114,070	44.0	18,435	59.0
13–14	78,783	33.6	16,168	28.7	86,067	33.2	8,903	28.1	86,472	33.4	8,473	27.1
15 or older	53,956	23.0	9,064	16.1	58,333	22.5	4,663	14.7	58,654	22.6	4,324	13.8
First cigarette?												
12 or younger	54,891	45.6	19,032	57.6	62,749	46.6	11,133	59.1	61,907	46.4	11,954	59.9
13 to 14	37,610	31.2	8,852	26.8	41,626	30.9	4,817	25.6	41,319	31.0	5,139	25.7
15 or older	27,970	23.2	5,161	15.6	30,180	22.4	2,895	15.4	30,208	22.6	2,870	14.4
First used marijuana?												
12 or younger	29,578	28.2	10,601	40.7	33,517	29.0	6,645	44.0	33,096	28.8	7,081	44.7
13 to 14	41,902	39.9	9,465	36.4	46,134	39.9	5,209	34.5	45,797	39.8	5,493	34.7
15 or older	33,416	31.9	5,952	22.9	36,090	31.2	3,254	21.5	36,078	31.4	3,255	20.6
Past 30 days used												
Cigarettes	45,085	8.7	13,897	13.2	49,969	8.8	8,967	15.5	49,020	8.6	9,885	17.8
Binge drinking	69,517	13.4	18,781	17.8	76,431	13.5	11,821	20.3	76,650	13.5	18,488	33.1
Marijuana	58,101	11.2	15,855	15.0	63,946	11.3	9,895	17.0	63,487	11.2	11,631	20.8

Note. LGBTQ = lesbian, gay, bisexual, transgender, queer.

^aNot all schools administered survey item.*All χ^2 values $p < .01$.

grades experienced harassment, there were clear developmental changes in the types of harassment experienced in younger as compared to older years; for example, harassment of a sexual nature at younger grades was primarily reported as sexual jokes or gestures, with an increased likelihood of harassment leading to coercion in sexual activity in the older grades. Other types of harassment, such as bullying, reflected in the types of rumors and lies spread or being made fun of because of appearance was experienced across all grades but was most prevalent in middle school-aged

children. A similar pattern was noted in physical contact, with higher rates of pushing and physical fights in middle school grades. Older students, as compared to younger students, were more likely to experience either selling drugs themselves or being offered drugs. Furthermore, while harassment remained fairly consistent across grades, there were difference in patterns of harassment by gender, race/ethnicity, and sexual orientation. Among racial/ethnically diverse students, almost one in six (17%) reported that their experience was directly attributable to their background. Students

Table 5. Exposure to Victimizing Event at School and Mental Health Symptoms and Academic Achievement.*

Symptom	Pushed, Slapped, or Kicked				Threatened With a Weapon				Forced to Have Sex ^b			
	No (N = 428,192)		Yes (N = 203,226)		No (N = 578,996)		Yes (N = 52,957)		No (N = 11,621)		Yes (N = 1,322)	
	N	%	N	%	N	%	N	%	N	%	N	%
Past 12 months												
Sad daily 2+ weeks	3,164	31.2	665	52.7	3,164	31.2	665	52.7	3,164	31.2	665	52.7
Grades As, Bs, Cs	8,248	80.8	962	74.3	8,248	80.8	962	74.3	8,248	80.8	962	74.3
Grades Ds or Fs	1,955	19.2	332	25.7	1,955	19.2	332	25.7	1,955	19.2	332	25.7
Past 30 days to lose weight												
No eating 24+ hr	1,214	14.7	320	31.2	1,214	14.7	320	31.2	1,214	14.7	320	31.2
Vomit or laxatives	737	9.0	220	21.5	737	9.0	220	21.5	737	9.0	220	21.5
Symptom	Harassed because of race				Harassed because of gender				Harassed because LGBTQ			
	No (N = 524,382)		Yes (N = 107,108)		No (N = 578,996)		Yes (N = 52,957)		No (N = 574,336)		Yes (N = 56,676)	
	N	%	N	%	N	%	N	%	N	%	N	%
Past 12 months												
Sad daily 2+ weeks	141,224	27.4	47,819	46.5	158,914	28.3	30,107	54.2	159,266	28.2	29,716	55.8
Grades As, Bs, Cs	97,000	18.8	22,879	21.8	454,840	80.8	45,833	79.5	458,162	81.1	42,319	76.2
Grades Ds or Fs	4,522	7.3	2,052	17.1	107,941	19.2	11,854	20.5	106,501	18.9	13,182	23.8
Past 30 days to lose weight												
No eating 24+ hr	7,848	11.7	2,087	16.5	8,512	11.7	1,420	20.5	8,494	11.6	1,426	22.0
Vomit or laxative	4,433	6.7	1,271	10.3	4,787	6.7	906	13.4	4,783	6.7	911	14.3

Note. LGBTQ = lesbian, gay, bisexual, transgender, queer.

^aNot all schools administered survey item.

*All χ^2 values $p < .001$.

representing the LGBT community were more likely to report being harassed than other students.

Given the ethnically diverse composition of California's and, increasingly, the nation's schools, the relationship between racial/ethnic, gender, and sexual orientation and bullying is important for schools to recognize, so that interventions can be tailored and understood in both the school and the community context in which students navigate. Hong et al.'s (2014) literature review concluded Latino and Asian school-aged youths in the United States are at greater risk for bullying because of their immigrant status, living in poverty, speaking English as a second language, and facing different family stressors as compared to White school-aged children. The experiences of Latino/a, African American, and Asian students reported in this study show that no

groups are immune from harassment. With growing shares of non-White students, particularly Latino/a students, it is important for schools that have less experience working with these students to gain expertise on the types of harassments they may be uniquely experiencing as well as those experienced across all ethnic/racial groups.

The high percentage of younger students experiencing harassment, including different forms of bullying, is noteworthy as educators may not recognize the impacts of negative school climate on the educational goals they are attempting to achieve or the consequences of harassment upon patterns of risk-taking behaviors that have serious consequences for academic failure. Study results indicate that harassment is associated with other risky behaviors, although causal relationships cannot be established with our

data and analysis. Alcohol and drug use was higher among students who also reported greater number and diversity of harassment experiences. Unsurprisingly, engagement in risky behaviors occurred more frequently with age. In addition, exposure to a victimizing event was significantly associated with younger age of onset of substance use, binge drinking, mental health symptoms related to eating disorders, and depression. Students engaged in higher levels of risk-taking behaviors may have a greater negative impact on academic success if their core learning skills throughout the middle and high school grades are disrupted.

Another important finding is the amount and level of harassment that students experience in their school setting throughout their middle and high school years. The lack of a personal sense of safety was associated with uneven attendance, an important indicator of academic failure. As students reached high school, they were more likely to miss school, as compared to younger students (53% in high school and 19% in middle school).

Implications for School Nursing

The results of this study point to the importance of creating safer schools that provide the type of oases that students need to successfully navigate these important years—in terms of both personal growth and academic success. Programs in bullying prevention have typically been universal interventions, such as whole school climate changes, with limited alternatives for students who do not respond to the universal model. For higher risk students, newer evidence indicates universal prevention programs may be more effective. However, few multitiered programs and targeted bullying prevention programs have been evaluated using randomized, controlled experimental designs. A meta-analysis of antibullying programs determined that the most effective ones include multiple components, are available across a variety of settings, are school wide, and often address school climate (The National Academies of Sciences, Engineering, and Medicine, 2016). School-based bullying prevention programs more often target middle school students rather than high school students, even though research generally finds that bullying programs are more effective among students ages 11–14 than students ages 10 or younger (Flannery et al., 2016).

This study's findings suggest the importance school-based interventions to address mental health issues, particularly in the middle school grades since many victimizing events occur on the school campus. Due to student accessibility, schools are an important point of contact for prevention, identification, and treatment of emotional and behavioral issues and mental health disorders (Bruns, Walrath, Glass-Siegel, & Weist, 2004; Denny et al., 2011). The high proportion of students experiencing different types of harassment also calls for a more comprehensive approach in

which the education and health sector work in tandem (Flannery et al., 2016).

One model of universal, selective, and indicated preventive and treatment interventions is reflected in the school-based health center (SBHC). Present in approximately 2% of schools, the SBHC offers place-based health care that provides comprehensive primary care services and—ideally—mental health screening and treatment on school grounds and in coordination with school teachers, administrators, and staff (School-based Health Alliance, 2016).

SBHCs with mental health providers are particularly well positioned to provide individual, small group, classroom, parent, and community behavioral and health promotion services (Larson, Spetz, Brindis, & Chapman, in press). SBHC providers may also participate on school committees and be available to provide professional development of teachers and school staff regarding behavioral health. Other stakeholders, such as school nurses and psychologists, can also play an important role in developing effective school-based preventive, screening, and treatment interventions.

In addition, school nurses can play an important role in addressing victimizing events experienced by students and the sequelae of victimization. School nurses serve as a resource for schools, school boards, and community organizations and should advocate for attention to and resources for appropriate responses to student victimization and trauma. They also can provide education and data that demonstrate the links between victimization, mental health, and academic outcomes. This information can motivate the development of programs to address these problems and also support applications for state and federal funds. For example, Title I, Part A, provides supplemental federal funds to support states' efforts to improve academic achievement in high-poverty schools. Programs that address at-school victimization may qualify for such funding sources when victimization and its negative sequelae on academic outcomes are clearly delineated.

School nurses are also ideally positioned to create and maintain relationships between the school board and local health departments, community health centers, or hospitals. They also can help education and health-care organizations identify opportunities to establish new SBHCs to complement the school nurse's role in meeting the health needs of students. School nurses are an integral source of information in the development of school-based mental health programs either by the SBHC model of care or Expanded School Mental Health model of care (Paternite, 2005) because they have knowledge of the student population and community (National Association of School Nurses, 2017).

Local, state, and federal policy, politics, and financing are major determinants of the expansion of evidence-based models that address mental health services in schools (Keeton, Soleimanpour, & Brindis, 2012). Addressing the violence and victimization that occurs on school grounds can

increase health equity for all students, especially those who are also exposed to additional nonvictimizing, but challenging events such as poverty, food insecurity, or homelessness. School-based providers that adopt trauma-informed care practice, policy, and treatment modalities will be better equipped to address the behavioral and mental health needs of children and adolescents (Harden et al., 2014; Lesser, Vacca, & Pineda, 2015).

Limitations and Directions for Future Research

There are limitations in the CHKS Core Module regarding measurement of victimization in school-aged children. The victimizing events reported in the survey, in most instances, had to have occurred on school grounds. School-based victimization may be distinctly different from family or community victimization, so there may be an undercount of the level of trauma experienced by students. Questionnaire items have additional limitations. For example, “forced to have sex” is limited to those students who have had sex and does not define all forms of sexual abuse. Another concern is that the mental health disorders of substance abuse, eating disorders, and depression cannot be diagnosed from the survey because the items are not comprehensive in their scope and do not include a clinical assessment. The CHKS survey also does not include items pertaining to other mental health disorders. Although the survey is not diagnostic, the included items do provide important information regarding the high levels of self-reported health risks and risk-taking behaviors that may require further professional attention by both teachers and other health providers.

There are also technical limitations with the survey. In order for a school district to be considered as having a representative sample of the student population, at least 60% of the targeted students and all selected schools and classrooms must have completed the survey (Austin et al., 2005). If the sampling is not representative, then it limits the generalizability of the results to all students in California. Schools may also skip sections of the 135-item survey.

Although the survey is anonymous, students may not accurately self-report confidential information and, as noted, were given the opportunity to report whether their answers were truthful. Approximately 12% indicated that their surveys were not accurate and thus were eliminated from the analyses. This elimination helped address misreporting of self-rated student assessments but could not fully control for the types of bias that results when students choose not to answer a specific question. In addition, some students marked more than one answer to an item, posing a challenge in determining in which category to classify the answer.

Finally, the decision to dichotomize data about victimization and use of illicit substances likely resulted in the loss of some information (MacCallum et al., 2002). We determined this was a reasonable trade-off to facilitate the cross tabulation of a large number of variables. Future research

should examine whether there are associations between the frequency or intensity of victimizing events and use of illicit substances as well as with other outcomes.

Conclusion

Middle and high school students are exposed to victimizing events on school grounds at alarming rates. Using a large, state-level survey of students, we find that students exposed to victimization use substances at higher rates than their peers not exposed to victimization. These same students also exhibit signs suggestive of mental health disorders as well as poor academic achievement. The results point to the need for school districts and communities to invest in school nurses, mental health-care providers, and SBHCs in order to improve school climate, decrease victimization rates, and contribute to improved student mental well-being and academic success.

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