

“Choking Game” Awareness and Participation Among 8th Graders — Oregon, 2008

The “choking game” is an activity in which persons strangle themselves to achieve euphoria through brief hypoxia (1). It is differentiated from autoerotic asphyxiation (2,3). The activity can cause long-term disability and death among youths (4). In 2008, CDC reported 82 deaths attributed to the choking game and other strangulation activities during the period 1995–2007; most victims were adolescent males aged 11–16 years (4). To assess the awareness and prevalence of this behavior among 8th graders in Oregon, the Oregon Public Health Division added a question to the 2008 Oregon Healthy Teens survey concerning familiarity with and participation in this activity. This report describes the results of that survey, which indicated that 36.2% of 8th-grade respondents had heard of the choking game, 30.4% had heard of someone participating, and 5.7% had participated themselves. Youths in rural areas were significantly more likely (6.7%) to have participated than youths in urban areas (4.9%). Choking game participation was higher among 8th graders who reported mental health risk factors (4.0%), substance use (7.9%), or both (15.8%), compared with those who reported neither (1.7%). Public health surveillance of these strangulation activities among youths should be expanded to better quantify the risks and understand the motives and circumstances surrounding participation. Parents, educators, counselors, and others who work with youths should be aware of strangulation activities and their serious health effects; they should watch for signs of participation in strangulation activities, especially among youths with suspected substance use or mental health risk factors.

The Oregon Healthy Teens survey, an annual population-based anonymous survey* of 8th and 11th graders† designed to monitor and measure adolescent health and well-being, is

* Available at <http://www.dhs.state.or.us/dhs/ph/chs/youthsurvey>. Beginning in 2009, Oregon Healthy Teens will be a biannual survey conducted in odd years only.

† The Oregon Healthy Teens survey includes students in 8th and 11th grades. However, knowledge of and participation in the choking game were only assessed on the 8th-grade survey. Therefore, all discussion and description of the survey in this report refers to the 8th-grade portion only.

based on the CDC’s Youth Risk Behavior Survey (YRBS) and includes questions on physical and mental health, sexual activity, substance use, physical activity/nutrition, and community characteristics. In 2008, all 647 Oregon public middle and high schools were part of the sampling frame, which was stratified into eight regions. Schools were sampled randomly from within each region, with a total of 114 schools being sampled. The data were weighted to achieve a statewide representative sample. Weighting was based on the probability of school and student selection, and a post-stratification adjustment for county participation. Schools use an active notification/passive consent model with parents, who may decline their child’s participation. In 2008, the survey contained a total of 188 questions, which were designed to be completed in the course of a class period. Overall, 77.0% of sampled schools agreed to administer the survey, and 83.7% of the 8th graders in those schools participated. In 2008, a single question about the choking game was added to the 8th-grade survey. Students were asked whether they had ever heard of the choking game, had heard of some-



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one participating, had helped someone participate, or had ever participated in the choking game themselves.[§]

All analyses were conducted using statistical software to accommodate the survey design and weighting appropriately. The strength of association between variables was analyzed using a chi-square test with Rao-Scott corrections, and all reported p-values are based on corrected Rao-Scott chi-square results.

The 2008 survey included 10,642 respondents. Of these, 7,757 (73%) answered the choking game question. The mean age of respondents to this question was 13.7 years (standard deviation = 0.5). Those who did not answer this question were more likely to be male and nonwhite and more likely to report

higher levels of sexual activity, substance use, and mental health risk factors. Among the respondents, 36.2% had heard of the choking game, and 30.4% had heard of someone participating in it. Additionally, 2.6% had helped someone participate, and 5.7% had ever participated themselves.

A similar percentage of females reported participating compared with males (5.3% versus 6.1%, $p = 0.13$). Hispanic (7.7%) and American Indian/Alaska Native (7.6%) youths had the highest participation rates, followed by white (5.4%), black (4.5%), Native Hawaiian (3.4%), and Asian (2.8%) youths.[¶] Youths living in rural areas had a significantly higher participation rate than those in urban areas (6.7% rural versus 4.9% urban, $p = 0.01$) (Table).

Youths who participated in the choking game were significantly more likely to also report other unhealthy behaviors and mental health risk factors. In

[§] The survey stated, "The next question refers to the 'Choking Game,' also called Knock Out, Space Monkey, Flatlining, or The Fainting Game. This is an activity that some youth participate in to get a high by cutting off blood and oxygen to the brain with a belt, towel, rope, or other item. Which of the following is true for you? (Please mark all that apply.) a. I have never heard of the Choking Game; b. I've heard of someone participating in the Choking Game; c. I have helped someone else participate in the Choking Game; d. I have participated in the Choking Game myself."

[¶] Persons identified as American Indian/Alaska Native, white, black, Native Hawaiian, and Asian are all non-Hispanic. Race/ethnicity categories are mutually exclusive.

The *MMWR* series of publications is published by the Office of Surveillance, Epidemiology, and Laboratory Services, Centers for Disease Control and Prevention (CDC), U.S. Department of Health and Human Services, Atlanta, GA 30333.

Suggested citation: Centers for Disease Control and Prevention. [Article title]. *MMWR* 2010;59:[inclusive page numbers].

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TABLE. Demographic characteristics and risk factors for participation in the “choking game”^{**} among 8th-grade students — Oregon Healthy Teens survey, 2008

Characteristic/Risk factor	No.	(%)	Prevalence of reported participation in choking game (%)	PR [†] (95% CI [§])	p-value
Sex					
Male	3,642	(47)	6.1	Referent	0.13
Female	4,115	(53)	5.3	0.9 (0.6–1.2)	
Geography					
Urban	3,944	(55)	4.9	Referent	0.01
Rural	3,813	(45)	6.7	1.4 (1.0–1.9)	
Race/Ethnicity[¶]					
White	5,298	(66)	5.4	Referent	0.009
Hispanic	1,184	(16)	7.7	1.4 (1.0–2.0)	
American Indian/Alaska Native	518	(7)	7.6	1.4 (1.0–2.0)	
Black	220	(4)	4.5	0.8 (0.5–1.3)	
Native Hawaiian	144	(2)	3.4	0.6 (0.3–1.5)	
Asian	308	(5)	2.8	0.5 (0.2–1.7)	
Mental health or substance use^{**}					
None	3,525	(45)	1.7	Referent	<0.001
Mental health only	1,878	(25)	4.0	2.3 (1.3–4.1)	
Substance use only	880	(11)	7.9	4.6 (2.7–7.8)	
Substance use and mental health	1,456	(19)	15.8	9.2 (5.8–14.7)	

* Based on response to the following survey item: “The next question refers to the ‘Choking Game,’ also called Knock Out, Space Monkey, Flatlining, or The Fainting Game. This is an activity that some youth participate in to get a high by cutting off blood and oxygen to the brain with a belt, towel, rope, or other item. Which of the following is true for you? (Please mark all that apply.) a. I have never heard of the Choking Game; b. I’ve heard of someone participating in the Choking Game; c. I have helped someone else participate in the Choking Game; d. I have participated in the Choking Game myself.”

† Prevalence ratio.

§ Confidence interval.

¶ Persons identified as white, American Indian/Alaska Native, black, Native Hawaiian, and Asian are all non-Hispanic. Race/ethnicity categories are mutually exclusive.

** *Mental health only* included youths who answered “yes” to at least one of four mental health risk questions: 1) contemplated suicide in past 12 months; 2) self-rated mental health status as “fair” or “poor” (versus “excellent,” “very good,” or “good”); 3) had an unmet mental health need in the past 12 months; or 4) gambled for money in the past 12 months. Youths indicating a substance use risk were excluded. *Substance use only* included youths who indicated using at least one of four substances in the past 30 days: 1) alcohol, 2) cigarettes, 3) marijuana, or 4) other illegal drugs (e.g., stimulants, LSD, ecstasy, cocaine, or heroin). Youths indicating a mental health risk factor were excluded. *Substance use and mental health* included youths indicating a mental health risk factor and substance use.

particular, youths who had used substances^{**} and also reported mental health risk factors^{††} had the highest participation rate (15.8%) and were approximately nine times more likely to participate in the choking game than those without either risk factor. Among those who reported substance use only and no mental health risk factors, the participation rate was 7.9%, and among those reporting mental health risk factors only but no substance use, the participation rate was 4.0%. The participation rates among all these groups were substantially higher than the rate among students who reported neither substance use nor mental health risk factors (1.7%) (Table).

** Included youths who indicated using at least one of four substances (alcohol, cigarettes, marijuana, or other illegal drugs) in the past 30 days.

†† Included youths who indicated at least one of four mental health risk factors (suicide contemplation in the past 12 months, self-rated mental health as “fair” or “poor,” unmet mental health need in past 12 months, and ever gambled for money).

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Editorial Note

This study represents the first systematic assessment at the state level for awareness of and participation in strangulation activities among youths. Results from the 2008 Oregon Healthy Teens survey indicated that nearly one third of 8th-grade students were aware of someone who participated in the choking game, and nearly 6% acknowledged trying it. Public health experts stress that this high risk activity is not a game and should not be referred to as such (1).

Before this study, published reports of this activity were anecdotal (2–8) or were based on small surveys, including one survey of 357 youths aged 12–18 years

What is already known on this topic?

During 1995–2007, CDC identified 82 unintentional deaths among children and adolescents related to participation in the “choking game” and other strangulation activities.

What is added by this report?

In 2008, nearly 6% of Oregon 8th graders reported ever having participated in the choking game, with rates highest among those also reporting substance use and mental health risk factors.

What are the implications for public health practice?

Parents and persons who work with youths (e.g., educators, counselors, and health-care providers) should be aware of these activities and their serious health consequences, and they should look for and be able to recognize signs of strangulation activities, especially among youths with reported substance use or mental health risk factors.

in Williams County, Ohio,^{§§} and one nonrandom survey of 2,504 youths aged 9–18 years in Texas and Ontario, Canada (9). Reported lifetime participation in strangulation activities was 11% in the Ohio study and 6.6% in the Texas/Canada study.

The results of the Oregon study suggest that the risk for participation in strangulation activities was higher for youths who had other health risk factors, particularly substance use and certain mental health risk factors. This is the first study to examine these risk associations in a scientific and systematic way. However, previous case studies with very small numbers (three or fewer) presented theories based on their case subjects that are relevant to the results described in this report. Regarding substance use, previous case studies proposed that youths who engage in strangulation activities were not likely to be using drugs or alcohol (2), a suggestion that is contrary to the results described in this report. On the other hand, the link between poorer mental health and strangulation activities has been reflected in some case studies, suggesting that youths experiencing peer rejection or other disruptive factors are more likely to participate in strangulation activities (6,8). Case reports also suggest that participation in strangulation activities might occur alone, which might result in increased risk for fatality or serious injury (2), or in groups gathered to watch others lose consciousness (6).

The association between participation in strangulation activities and other sensation-seeking behaviors or mental health risk factors suggests that effective methods for substance use prevention might serve as

^{§§} Additional information available at <http://www.co.williams.oh.us/family%20first/williams%20final%20report%202-6-07.pdf>.

models for effective prevention strategies. Prevention messages for this activity should be tested before being incorporated into general use to minimize unintended consequences, such as increased participation (4). Because of the apparent overlap between youths participating in strangulation activities and mental health and substance use risk factors, effective prevention messages could be incorporated into existing substance use and mental health screening instruments, curricula, or related public health tools.

The previous survey of youths aged 9–18 years conducted in Texas and Ontario, Canada, found that 40% of surveyed youths thought no risk existed for participating in the choking game existed (9). This common misconception highlights the need for basic factual information about the health risks of strangulation activities in prevention messages. The age of the youths should be considered when determining the type of message and the messenger (9).

Parents, educators, counselors, health-care providers, and others who work with youths should become aware of strangulation activities and the signs of participation (e.g., mention of the choking game [or the game by its other names]; bloodshot eyes; marks on the neck; frequent, severe headaches; disorientation after spending time alone; and ropes, scarves, and belts tied to bedroom furniture or doorknobs or found knotted on the floor) (3). Nearly one third of 163 pediatricians and family practitioners recently surveyed were not aware of the choking game or the signs indicating that a patient might be participating in this activity (10). Finally, to identify participating youths, health and mental health practitioners should consider adding a question about strangulation activities to clinical screening tools, especially for youths identified as having substance use or mental health risks.

The findings in this report are subject to at least four limitations. First, because only public school students were surveyed, youths who attended private schools, were homeschooled, were institutionalized, or were not attending school were not represented in the results. Second, the survey did not ask about frequency of participation or time elapsed since most recent participation. Substantial differences might exist among youths who participated regarding frequency or recency. Third, this analysis is based on a prevalence determination from a single question that was not tested for reliability or validity. Finally, a substantial proportion of the 8th graders surveyed

(23%) did not complete the choking game question. A comparison of responders and nonresponders revealed that nonresponders belong to groups with likely higher rates of participation in the choking game.

To develop effective prevention programs, quantitative and qualitative research is needed to understand why and under what circumstances youths engage in strangulation activities. In the meantime, based on the findings described in this report, the Oregon Public Health Division is developing and evaluating educational materials for educators and clinicians who work in school-based health centers and other primary-care locations.

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