

# The Choking Game: Physician Perspectives



**WHAT'S KNOWN ON THIS SUBJECT:** Reports in the popular media and case reports have described the choking game activity and its consequences. The incidence of the activity has been described.



**WHAT THIS STUDY ADDS:** We report on physician awareness of the choking game and opinions on including discussion of its dangers in anticipatory guidance for adolescents.

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## KEY WORDS

choking game, asphyxia, anticipatory guidance, adolescents, injury prevention

## ABBREVIATIONS

AAP—American Academy of Pediatrics

AEA—autoerotic asphyxia

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## abstract

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**OBJECTIVE:** The goal was to assess awareness of the choking game among physicians who care for adolescents and to explore their opinions regarding its inclusion in anticipatory guidance.

**METHODS:** We surveyed 865 pediatricians and family practitioners. The survey was designed to assess physicians' awareness of the choking game and its warning signs, the suspected prevalence of patients' participation in the activity, and the willingness of physicians to include the choking game in adolescent anticipatory guidance. Information on the general use of anticipatory guidance also was collected.

**RESULTS:** The survey was completed by 163 physicians (response rate: 21.8%). One-hundred eleven (68.1%) had heard of the choking game, 68 of them (61.3%) through sources in the popular media. General pediatricians were significantly more likely to report being aware of the choking game than were family practitioners or pediatric subspecialists ( $P = .004$ ). Of physicians who were aware of the choking game, 75.7% identified  $\geq 1$  warning sign and 52.3% identified  $\geq 3$ . Only 7.6% of physicians who were aware of the choking game reported that they cared for a patient they suspected was participating in the activity, and 2 (1.9%) reported that they include the choking game in anticipatory guidance for adolescents. However, 64.9% of all respondents agreed that the choking game should be included in anticipatory guidance.

**CONCLUSIONS:** Close to one third of physicians surveyed were unaware of the choking game, a potentially life-threatening activity practiced by adolescents. Despite acknowledging that the choking game should be included in adolescent anticipatory guidance, few physicians reported actually discussing it. To provide better care for their adolescent patients, pediatricians and family practitioners should be knowledgeable about risky behaviors encountered by their patients, including the choking game, and provide timely guidance about its dangers. *Pediatrics* 2010;125:82–87

Thrill-seeking or risk-taking behavior among adolescents has long contributed to morbidity and death in this age group.<sup>1</sup> Reports in the popular media have brought increased attention to a dangerous activity among adolescents known as the “choking game,” among other names.<sup>2</sup> In this activity, participants attempt to gain a “high” or euphoric feeling by temporarily depriving the brain of oxygen. This is achieved through pressure applied to the neck by another person’s hands or with belts, neckties, or other ligatures. Alternatively, the activity may entail one person taking a deep breath and holding it, while a second person hugs that person from behind until the first person feels dizzy and passes out.<sup>3</sup> Those who participate in this activity often describe an additional pleasurable sensation with the rapid outflow of previously impeded deoxygenated blood from the brain when pressure is released.

The choking game can be played in groups or alone, and participants often are between 7 and 21 years of age. This activity becomes life-threatening when the victim is alone, loses consciousness, and cannot release the ligature. Several case studies documented death or near-death in adolescents, often boys, who were found unconscious and later identified by family or friends as having played the choking game.<sup>3–5</sup> Attempting to publicize the risks associated with the choking game, advocacy groups have compiled lists of parent-reported choking game–related deaths and have identified >100 deaths per year between 2005 and 2007.<sup>6,7</sup> A recent report from the Centers for Disease Control and Prevention used reports in the media to estimate 82 probable choking game–related deaths from 1995 to 2007.<sup>8</sup> Aside from the lethal dangers of asphyxiation, case studies of individuals suspected of participating in the

choking game have shown nonfatal injuries such as seizures, headaches, fractures, and brain injury ranging from subtle cognitive impairment to persistent vegetative state.<sup>9,10</sup> The full extent of the injuries and deaths caused by the choking game is likely underrepresented by these accounts, because many of the cases are never reported or may be misclassified as suicides.<sup>11</sup>

A variety of warning signs suggest that an adolescent may be participating in the choking game. These signs include headaches, unexplained bruising around the neck, bloodshot eyes, facial petechiae, disorientation after being alone, ligatures tied in strange knots or in unusual places, and wear marks on furniture.<sup>6,7</sup> Local and state agencies have issued warnings to schools and law enforcement agencies describing these signs, in an attempt to educate teachers and parents regarding this deadly game.<sup>12</sup> Several case studies and editorials called for preventative measures by educators, physicians, and others who care for adolescents.<sup>2–4,10</sup> Physicians are in a unique position to recognize these subtle signs of self-inflicted asphyxiation and to provide timely guidance on the dangers of such activity to both adolescent patients and their parents.

Relatively little published literature documents the choking game and the extent of physician awareness and knowledge of the activity. For physicians caring for adolescents, providing effective, timely, current anticipatory guidance is an important goal of all patient encounters. Despite the emergence of the choking game as a serious threat to adolescent health, counseling for adolescents and their parents regarding the dangers and warning signs of the choking game is not currently listed by the American Academy of Pediatrics (AAP) as a recommended topic for adolescent antic-

ipatory guidance.<sup>13</sup> Therefore, this study aims to assess the knowledge of this game among pediatricians and family practitioners who care for adolescents and to explore their opinions regarding inclusion of the dangers of the choking game in anticipatory guidance for their adolescent patients.

## METHODS

### Subjects and Design

Eight hundred sixty-five pediatricians and family practitioners in northeast Ohio were invited to participate in the study. These physicians were identified through the Rainbow Babies and Children’s Hospital pediatrician and family physician database, along with current residents in pediatrics and family medicine residency programs in northeast Ohio (defined as the counties of Cuyahoga, Geauga, Lake, Lorain, and Medina). Participants were excluded if there was no mailing or e-mail address available in the database or the location of practice listed in the database was not in northeast Ohio.

In December 2007, a survey was sent through either e-mail or US mail to each participant, along with a cover letter describing the purpose of the survey. Electronic correspondence was used whenever an e-mail address was available; otherwise, a paper copy of the survey was sent through US mail. An addressed, stamped, return envelope was included in the postal mailing for return of the completed survey. E-mail–based questionnaires used the Survey Monkey online data collection system (Survey Monkey, Portland, OR). For all electronic correspondence, a reminder e-mail was sent 4 weeks after the initial contact. The survey was closed to further responses after 6 weeks. The study was approved by the University Hospitals Case Medical Center institutional review board.

## Survey Instrument

The survey was designed to assess northeast Ohio physicians' knowledge and awareness of the choking game. Questions were designed to assess their baseline knowledge of the choking game and its warning signs, alternative names for the choking game, the suspected prevalence of their patients' participation in this behavior, and the willingness of physicians to include discussion of the choking game in anticipatory guidance for adolescent care. In addition, respondents were asked to identify anticipatory guidance topics that they covered on a regular basis with patients 8 to 18 years of age and their parents. Anticipatory guidance topics were identified through the published recommendations of the National Center for Education in Maternal and Child Health, consistent with AAP guidelines for health supervision.<sup>13</sup> Participants also were asked to report the amounts of time they typically spent on anticipatory guidance in well-child and sick-child visits, along with their opinions on their ability to cover all that they consider necessary to include in anticipatory guidance for their patients. Finally, demographic information, including age, length of time in practice, level of training, specialty, and size of residency class, was collected.

## Statistical Methods

The primary outcome was awareness of the choking game. Demographic characteristics are reported as frequencies and proportions, overall and according to outcome group. Responses are reported in a similar manner. The primary outcome is reported as observed numbers and proportions, with 95% confidence intervals. Associations with the outcome were tested by using  $\chi^2$  analysis. All analyses were performed with SAS 9.1 (SAS

**TABLE 1** Characteristics of Respondents Who Were Aware or Unaware of the Choking Game

Characteristic	Overall (N = 163)	Aware (N = 111)	Unaware (N = 52)
Age, mean $\pm$ SD, y	40.1 $\pm$ 11.0	40.2 $\pm$ 11.5	39.8 $\pm$ 10.0
Time in practice, n (%)			
<10 y	98 (60.1)	67 (60.4)	31 (59.6)
10–19 y	29 (17.8)	18 (16.2)	11 (21.1)
$\geq$ 20 y	36 (22.1)	26 (23.4)	10 (19.2)
Level of training, n (%)			
Resident/fellow	50 (30.7)	37 (33.3)	13 (25.0)
Faculty member/attending physician	113 (69.3)	74 (66.7)	39 (75.0)
Specialty, n (%) <sup>a</sup>			
Family practice	48 (29.5)	28 (25.2)	20 (38.5)
General pediatrics	84 (51.5)	66 (59.5)	18 (34.6)
Pediatrics subspecialty	31 (19.0)	17 (15.3)	14 (26.9)
Type of training hospital, n (%)			
Rural or community	30 (18.4)	19 (17.1)	11 (21.2)
Academic	133 (81.6)	92 (82.9)	41 (78.9)
Size of residency class, n (%)			
Small (<10)	52 (31.9)	33 (29.7)	19 (36.5)
Medium (10–19)	46 (28.2)	28 (25.2)	18 (34.6)
Large ( $\geq$ 20)	63 (39.9)	50 (45.1)	15 (28.9)

<sup>a</sup>  $P = .004$ , general pediatricians versus other specialties.

Institute, Cary, NC). The level of significance was set at  $P = .05$ .

## RESULTS

### Respondent Characteristics

The survey was sent to a total of 865 physicians, through US mail for 265 (30.6%) and through e-mail for 600 (69.4%). This total subject pool consisted of 614 practicing physicians (71.0%) and 251 residents (29.0%) in the fields of pediatrics or family medicine. Of the physicians to whom surveys were sent, 31 (3.5%) had undeliverable addresses and 3 (0.3%) did not complete the survey because they responded that they did not care for pediatric patients. Of the remaining 831 eligible participants, 181 returned the survey (response rate: 21.8%), 42 (23.2%) through US mail and 139 (76.8%) through e-mail. Eighteen respondents did not complete the entire survey, failing to respond to the main questions regarding the choking game. Those respondents were excluded from data analysis, which resulted in 163 subjects. Table 1 shows the demographic information for all subjects. Respondents ranged from 26 to 72 years of age.

### Choking Game Awareness

Of the physicians surveyed, 111 (68.1% [95% confidence interval: 60.5%–75.9%]) reported that they had heard of the choking game. Of those who knew about the choking game, 68 (61.3%) reported hearing about the choking game through popular media, either alone or in combination with another source. Other sources included professional conferences (15.3%), other professional experiences (8.1%), literature (9.0%), patients (11.7%), or an experience from their personal lives (12.6%). Eight respondents (7.2%) described knowledge about the choking game from their own childhoods, either from participating in it themselves or through childhood friends. Table 1 describes the demographic characteristics associated with knowledge of the choking game. General pediatricians were significantly more likely to report being aware of the choking game, compared with the other specialties represented ( $P = .004$ ) (Table 1). No other demographic characteristic collected was significantly associated with awareness of the choking game.

**TABLE 2** Physician Awareness of Alternative Names for the Choking Game

Alternative Names	Awareness Among Those Aware of Choking Game (N = 111), n (%)
AEA	74 (66.7)
Pass-out game	51 (46.0)
Fainting game	48 (43.2)
Black out	38 (35.1)
5 min of heaven	27 (24.3)
Rush	20 (18.0)
Knock-out game	17 (15.3)
Natural high	16 (14.4)
Suffocation roulette	9 (8.1)
Space monkey	5 (4.5)
Funky chicken	4 (3.6)
Speed dreaming	4 (3.6)
Tingling game	4 (3.6)
Purple dragon	2 (1.8)

Respondents also were asked to identify the names of similar asphyxial activities among adolescents. The most commonly identified activity was autoerotic asphyxia (AEA), with 62.0% of all physicians surveyed reporting knowledge of AEA. AEA is the practice of using strangulation to enhance the pleasure of sexual stimulation. Several reports have acknowledged the difference between AEA and the choking game and other asphyxial activities among youths, stating that AEA, although similar, should be considered a separate entity because its participants are almost exclusively adult and the choking game does not necessarily include masturbation.<sup>11</sup> Because of this, AEA was excluded from the analysis of alternative names for the choking game. The median number of alternative names identified by physicians aware of the choking game was 2 (range: 0–10 names). The most frequently identified alternative names were “pass-out game” (46.0%), “fainting game” (43.2%), and “black out” (35.1%). Of those who reported that they were aware of the choking game, 71.2% were able to identify  $\geq 1$  other name for asphyxial activity among adolescents and 53.2% were able to identify  $\geq 2$  alternative names. Table 2 shows

**TABLE 3** Physician Awareness of Warning Signs of the Choking Game

Recognizable Warning Signs	Awareness Among Those Aware of Choking Game (N = 111), n (%)
Strange bruising or red marks around neck	78 (70.3)
Bloodshot eyes and/or petechiae on face	64 (57.7)
Ligatures (bed sheets, belts, tee shirts, ties, or ropes) tied in strange knots and/or found in unusual places	46 (41.4)
Internet history of Web sites or chat rooms mentioning asphyxiation or choking game	35 (31.5)
Curiosity about asphyxiation (ie, “how’s it feel” or “what happens if”)	34 (30.6)
Disorientation and/or grogginess after being alone	25 (22.5)
Unusual demands for privacy	25 (22.5)
Locked or blocked bedroom/bathroom doors	25 (22.5)
Frequent, often-severe headaches	21 (19.9)
Changes in attitude (overly aggressive)	16 (14.4)
Wear marks on furniture (eg, bunk beds or closet rods)	16 (14.4)

alternative names and physician awareness of each.

Physicians who were aware of the choking game identified a median of 3 warning signs (range: 0–11 signs) of a patient’s involvement in this activity. The most common signs were bruising around the neck (70.3%), bloodshot eyes and/or petechiae on the face (46.0%), and ligatures tied in strange knots and/or found in unusual places (42.2%). Three fourths of physicians who reported that they were aware of the choking game were able to identify  $\geq 1$  warning sign; 52.3% were able to identify  $\geq 3$ . Table 3 describes the warning signs of participation in the choking game and physician awareness of each.

Of physicians who were aware of the choking game, 7.6% had cared for a

patient they suspected had participated in the activity. Only 2 respondents, that is, 1.9% of those who knew about the choking game, reported that they included the choking game in anticipatory guidance offered to their adolescent patients; however, 64.9% of all respondents agreed that the choking game should be included in anticipatory guidance. Most physicians (84.8%) were not concerned that discussing the choking game with their adolescent patients would prompt the patients to participate in it.

### Anticipatory Guidance

Table 4 shows responses to anticipatory guidance questions. The majority of physicians surveyed (70.6%) reported spending  $>2$  minutes on antic-

**TABLE 4** Time Spent on Anticipatory Guidance

	n (%)		
	Overall	Aware of Choking Game	Unaware of Choking Game
Time spent on anticipatory guidance at well-child visits <sup>a</sup>			
None	7 (4.3)	4 (3.6)	3 (5.8)
<1 min	7 (4.3)	5 (4.5)	2 (3.9)
1–2 min	34 (20.9)	15 (13.5)	19 (36.5)
>2 min	115 (70.6)	87 (78.4)	28 (53.9)
Time spent on anticipatory guidance at sick-child visits			
None	32 (19.6)	20 (18.0)	12 (23.1)
<1 min	56 (34.4)	33 (29.7)	23 (44.2)
1–2 min	54 (33.1)	42 (37.8)	12 (23.1)
>2 min	21 (12.9)	16 (14.4)	5 (9.6)
Inadequate time to cover anticipatory guidance topics	147 (90.2)	103 (92.8)	44 (84.6)

<sup>a</sup> P = .002,  $>2$  minutes vs  $<2$  minutes.

ipatory guidance at well-child visits. However, physicians who reported that they were aware of the choking game were significantly more likely to describe spending >2 minutes on anticipatory guidance than were those who were not aware of the activity (78.4% vs 53.9%;  $P = .002$ ). In comparison, only 12.9% of all physicians reported spending >2 minutes on anticipatory guidance during sick-child visits, with no significant difference between those who were aware of the choking game and those who were not. Finally, 90.2% of all physicians surveyed thought there is not enough time in typical well-child visits to cover all of the recommended anticipatory guidance topics.

Of the 62 anticipatory guidance topics listed in the survey, the most commonly reported topics covered for patients 8 to 18 of age were smoking/chewing tobacco (87.7%), healthy, well-balanced diet (87.7%), school performance (87.1%), adequate physical activity (85.9%), and alcohol use (86.5%). Of the 62 topics, 56 topics (82.3%) had a nominally higher frequency among physicians who reported that they were aware of the choking game, compared with those who were not aware of this activity.

## DISCUSSION

This study demonstrated that a majority of physicians caring for adolescents were aware of the choking game, but this knowledge did not translate into counseling of patients regarding the risks of the activity. Although most of the physicians surveyed agreed that the choking game should be included as a topic of discussion with their adolescent patients, very few reported actually discussing it. Apart from superficial knowledge provided by sources in the popular media, many physicians surveyed could not identify the major warning signs that may be displayed

by patients who participate in this activity.

Few physicians reported that they had cared for a patient whom they suspected had participated in the choking game. This perceived incidence is grossly inconsistent with data available from surveys of adolescents disclosing their participation. A survey of adolescents in Williams County, Ohio, reported that 11% of adolescents admitted to having played the choking game.<sup>14</sup> A more-recent survey of middle school and high school students in Texas and Ontario showed that 68% of children had heard of the choking game, 45% knew someone who had played it, and 6.6% had tried it themselves.<sup>15</sup> This inconsistency between physicians' perceptions and adolescents' self-reports suggests that this behavior is occurring much more often than physicians appreciate.

Pediatricians and family practitioners play a central role in the health of adolescents who seek care for illnesses, as well as routine care and preparticipation physical examinations. These interactions allow physicians the unique opportunity to screen adolescents for high-risk behaviors and to provide education to patients and their parents. No physician can diagnose or counsel a patient about a behavior of which he or she is not aware. Many of the physicians in this survey were not aware of the choking game or its implications. Reliable accurate information needs to be developed for physicians, to allow them to counsel adolescents and their parents adequately. The AAP currently does not recommend inclusion of the choking game in anticipatory guidance, and physicians have little opportunity to learn about this deadly behavior.

As demonstrated in this survey, even physicians who are aware of the choking game fail to communicate its dangers to adolescent patients. Some bar-

riers to discussing the choking game may be fear of offending patients or their parents or fear of prompting patients to participate in asphyxial activity. Thomas et al<sup>16</sup> examined anticipatory guidance on topics such as sexual normalcy and sexual abuse prevention, which currently are recommended by the AAP as topics of discussion, and 98% of surveyed parents thought that their doctor should discuss  $\geq 1$  topic related to normal sexuality with their child. No evidence exists to suggest that discussing other risky behaviors, such as smoking, alcohol use, drug use, and sexuality, with adolescents prompts them to participate in those activities. In addition, with the availability of the Internet and its frequent use by adolescents, information on the choking game already is available to adolescents; indeed, videos demonstrating how to engage in the activity can be found on popular Web sites. It is likely that many adolescent patients know about the choking game but do not understand how risky the behavior is.

Anticipatory guidance represents a critical opportunity to enhance adolescent health, although the wide array of topics a physician might cover during these brief opportunities is daunting. As our survey showed, most physicians think that the time available during a well-child visit is inadequate for discussion of all that is recommended. However, physicians who care for adolescents are in a unique position to raise awareness, to detect warning signs, and to educate adolescents and their parents about this dangerous behavior before it is too late. Among parents of youths who died as a result of choking game–related activity, the most common recollection is that they were unaware that the choking game existed and they would have recognized the warning signs in their child if they had known what to look for.<sup>17</sup> A

brief targeted conversation with adolescents and their parents about the choking game may put this activity on parents' "radar" and help prevent children from playing this deadly game. All pediatric providers, including emergency medicine physicians, pediatric neurologists, and other specialists, should be aware of this activity and, when appropriate, be prepared to discuss it with their patients.

This survey was primarily descriptive in nature, as dictated by the survey design. This limits the results to observations of the opinions expressed by those who responded to the survey. This might have biased our sample, because the respondents might not be representative of the group at large. In addition, external validity is limited by the small sample size from a relatively small geographic area.

Future research may study national awareness of the choking game among physicians, as well as examin-

ing the awareness of emergency physicians, because this group of providers is likely to encounter patients injured through participation in the activity. Additional information on knowledge of the choking game among adolescents and their parents would be valuable. Although recent studies showed that up to 7% of adolescents admit to participating in the choking game,<sup>15,18</sup> further investigation of injuries resulting from this activity may be worthwhile. Future studies also could explore methods for raising awareness of the choking game among adolescents, their parents, and the physicians who care for them. These methods might include incorporation of the choking game into residency curricula and physician continuing education, preparation of an informational pamphlet describing this deadly game for parents, or inclusion of the choking game in recommended anticipatory guidance for adolescents.

## CONCLUSIONS

The choking game is a dangerous activity that is popular among adolescents; however, some physicians caring for adolescents seem to be unaware of the choking game and are unable to identify important warning signs of participation in the activity. The AAP places importance on providing timely anticipatory guidance to children and adolescents. On the basis of this study, we think that the choking game should be included in this discussion. Moreover, pediatricians and family practitioners should be provided with reliable accurate information about the dangers of the choking game, to pass on to their adolescent patients and their parents.

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