Pediatric Injuries Related to Window Blinds, Shades, and Cords

Bridget Onders, MD,[a,b] Eun Hye Kim, BS, BA,[a,b] Thitphalak Chounthirath, MS,[a] Nichole L. Hodges, PhD,[a,b] Gary A. Smith, MD, DrPH[a,b,c]

abstract

OBJECTIVES: To provide an epidemiologic description of fatal and nonfatal window blind–related injuries among US children younger than 6 years of age.

METHODS: Data from the Consumer Product Safety Commission's National Electronic Injury Surveillance System and In-Depth Investigation (IDI) databases were retrospectively analyzed.

RESULTS: From 1990 to 2015, there were an estimated 16 827 (95% confidence interval: 13 732–19 922) window blind–related injuries among children younger than 6 years of age treated in emergency departments in the United States, corresponding to an injury rate of 2.7 per 100 000 children. The most common mechanism of injury was "struck by" (48.8%). Entanglement injuries accounted for 11.9% of all cases, and among this subgroup, 98.9% involved blind cords, and 80.7% were to the neck. Overall, most injuries (93.4%) were treated and released. In IDI reports for 1996 through 2012, we identified 231 window blind cord entanglement incidents among children <6 years of age, and 98.7% involved the child's neck; entanglements with the window blind's operating cords (76.4%) or inner cords (22.1%) were the most common. Two-thirds of entanglement incidents included in the IDI database resulted in death (67.1%).

CONCLUSIONS: Despite existing voluntary safety standards for window blinds, these products continue to pose an injury risk to young children. Although many of the injuries in this study were nonfatal and resulted in minor injuries, cases involving window blind cord entanglements frequently resulted in hospitalization or death. A mandatory safety standard that eliminates accessible window blind cords should be adopted.

WHAT'S KNOWN ON THIS SUBJECT: Window blind cords have been recognized as a safety hazard for young children for more than 70 years. Numerous voluntary safety standards and recalls for window blinds have been implemented to reduce the risk of these injuries.

WHAT THIS STUDY ADDS: Window blinds remain an important injury hazard for young children. Although cord entanglements are not the most common mechanism of window blind injury, they pose a serious strangulation risk and can result in hospitalization or death.

[a]*Center for Injury Research and Policy, The Research Institute at Nationwide Children's Hospital, Columbus, Ohio;* [b]*College of Medicine, The Ohio State University, Columbus, Ohio; and* [c]*Child Injury Prevention Alliance, Columbus, Ohio*

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Address correspondence to Gary A. Smith, MD, DrPH, Center for Injury Research and Policy, The Research Institute at Nationwide Children's Hospital, 700 Children's Dr, Columbus, OH 43205. E-mail: gary.smith@nationwidechildrens.org

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Window blinds are frequently found in homes throughout the United States. However, there are potential dangers associated with these products, especially the risk of strangulation among young children by window blind cords. The US Consumer Product Safety Commission (CPSC) ranks window blind cords among the top 5 hidden hazards in US homes.[1]

Window blind injuries have been identified in the medical literature as early as 1945, yet they continue to occur today.[2] From 1981 to 1995, there were 183 deaths from window blind cord asphyxiations among young children in the United States, and the mortality rate for window cord strangulations was 0.14 per 100 000 children <4 years old.[3] In 1994, the CPSC and Window Covering Manufacturers Association, Inc (WCMA) announced an industry plan to eliminate loops from most window blind pull cords and offer free repair kits for consumers possessing these products.[4] In 2000, similar measures were taken to address loops in the inner cords of window blinds.[5] Despite previous recalls of specific types of window blinds and existing voluntary safety standards for window coverings, window blind cords continue to be a public health threat to young children.[4–6]

Several studies and case reports have been published concerning window blind cords and the risk of strangulation among children.[2,3,7–11] Our research is unique in that we examine both fatal and nonfatal window blind–related injuries using 2 robust national databases. National Electronic Injury Surveillance System (NEISS) data are analyzed to provide a nationally representative description of pediatric injuries associated with window blinds, shades, and cords, and In-Depth Investigation (IDI) reports provide detailed information on window blind cord entanglements. Together, these data comprehensively elucidate the epidemiology of window blind–related injuries among US children <6 years old.

METHODS

Data Sources

Data were obtained from the NEISS and IDI databases maintained by the CPSC. The NEISS database is a nationally representative stratified probability sample that includes injury data from ∼100 hospital emergency departments (EDs). The sample frame consists of more than 5300 hospitals with a 24-hour ED and at least 6 beds located in the United States and its territories. The NEISS database provides information regarding consumer products involved, patient demographics, body region injured, injury diagnosis, disposition from the ED, and a brief case narrative.

The IDI database contains reports from CPSC field investigators, who follow-up on selected consumer product–related incidents. Cases are identified by using the NEISS as well as the CPSC's Injury and Potential Injury Incident and Death Certificate databases.[12] The Injury and Potential Injury Incident database includes information from media reports, consumer complaints, medical examiner and coroner reports, and other sources. The IDI database provides detailed information about the injury incident, including data from victim and eyewitness reports, documents from local authorities, and product information.

Case Selection

Definitions of window covering terminology used in this study are included in the Supplemental Information.[6] In this study, we included only incidents involving window blinds and shades. Incidents associated with shutters, draperies, or curtains were excluded. The terms "blind" and "window blind" are used interchangeably in this article to represent window blinds and shades, unless otherwise stated.

Window blind–related injuries among children <6 years old treated in US EDs from 1990 to 2015 were identified in the NEISS database by using product code 0638 for "window shades, venetian blinds, or indoor shutters." The following were excluded: 5 cases in which window blinds were not the cause of injury, 4 cases involving shutters, and 1 case in which the injury was related to a box of uninstalled window blinds. There are 596 cases from the NEISS included in this study.

IDI cases involving window covering cord entanglement among young children from 1996 to 2012 were reviewed. To be consistent with the NEISS, 14 cases involving curtain or drapery cords and 5 cases involving children ≥6 years old were excluded. Fifteen cases were excluded because investigators were unable to obtain additional information. There are 231 IDI reports included in this study.

NEISS Variables

NEISS data were consolidated and reclassified. Body regions were grouped into the following categories: (1) head (including the face, head, mouth, or eyeball), (2) neck (including "all parts of body [more than 50% of body]" or "25–50% of body" when neck involvement was indicated in the narrative), (3) hand (hand or finger), and (4) other. Diagnoses were grouped into the following categories: (1) laceration (lacerations and avulsions when skin avulsion in a laceration-type injury was indicated in the narrative), (2) anoxia (anoxia and "other" when anoxia was indicated in the narrative), (3) contusion or abrasion, and (4) other. Incident location was categorized as (1) home or (2) other (including school and other public property). Disposition from the ED was classified as one of the following: (1) treated and released, (2) hospitalized

(treated and transferred to another hospital, treated and admitted, and held for observation), (3) left against medical advice, and (4) fatality.

NEISS case narratives were used to define injury mechanism, the part of the blind involved, and blind type. Injury mechanism was grouped into the following categories: (1) entanglement (any body part, regardless of strangulation concern), (2) struck by (struck by the falling blind, pulling the blind onto self, or unspecified struck by), (3) struck on, (4) cut by, and (5) other (falling due to blinds and other mechanisms).

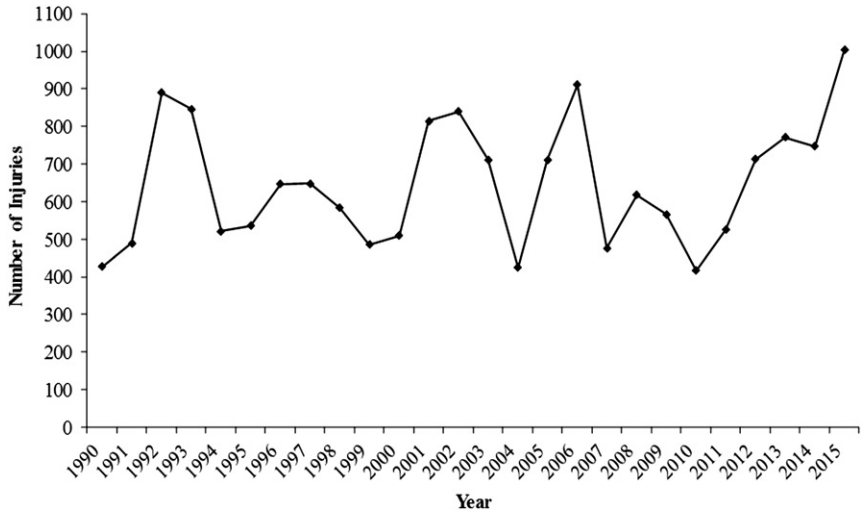

FIGURE 1
Estimated annual number of window blind–related injuries among children younger than 6 years of age treated in US EDs, NEISS 1990 to 2015. Estimates are potentially unstable because of a sample size <20 cases, an estimate of <1200 cases, or a coefficient of variation >33%.

IDI Variables

Data from IDI reports were also recategorized. The body region involved was classified as (1) neck or (2) arm (including the wrist). Diagnoses were grouped into the following categories: (1) no injury (ie, near-miss cases), (2) anoxia, and (3) abrasion (including laceration and contusion). ED disposition was categorized as one of the following: (1) nonhospital treatment (including no injury or injured but treated at home), (2) treated and released, (3) hospitalized, and (4) fatality. Blinds were categorized into the following types: (1) horizontal blinds (including Venetian and mini blinds), (2) vertical blinds, (3) Roman shades, (4) cellular and/or pleated shades, (5) roller shades, and (6) roll-up shades. Blind location was categorized as one of the following: (1) living room, (2) bedroom, and (3) other. Cord types were categorized as one of the following: (1) operating cords (including tilt cords and continuous loop cords), (2) inner cords, and (3) lifting loops. Mode of entanglement was categorized as one of the following: (1) loop in the manufactured design, (2) loop formed by knotted or tangled cords, (3) loop formed by the inner cord, (4) loop formed by tying the cord to a stationary object (usually a wall or headrail, which is the top portion of a blind unit affixed to the wall), and (5) nonloop (ie, intentional or unintentional wrapping of cord around the child's neck). The child's last known status before the incident was categorized as one of the following: (1) put to sleep and/or asleep, (2) playing, (3) watching television, (4) looking out the window, and (5) other. The child's position when found was classified into the following categories: (1) suspended (feet above the ground), (2) partially suspended, and (3) not suspended. Objects facilitating access to blind cords were categorized as one of the following: (1) bed, (2) crib or playpen, (3) floor, (4) couch or sofa, (5) window sill, (6) other furniture, and (7) other objects.

Statistical Analysis

Data were analyzed by using SAS Enterprise Guide 7.11 HF3 (SAS Institute, Inc, Cary, NC). NEISS data were analyzed by using SAS complex survey procedures to account for sampling design. CPSC sampling weights were used to calculate national estimates, and the Taylor series linearization method was used to calculate the variance of the estimates. The results reported for the NEISS data are stable national estimates unless stated otherwise. An estimate is potentially unstable if the sample size is <20 cases, the estimate is <1200 cases, or the coefficient of variation is >33%. For completeness in reporting, potentially unstable estimates involving hospitalization and death associated with entanglement are reported. US Census Bureau July 1 intercensal and postcensal population estimates were used to calculate injury rates.[13] Because all the annual estimates are potentially unstable, secular trend analysis was not performed, but the estimated annual number of injuries is given in Fig 1. IDI report analyses were restricted to frequencies and proportions. This study was judged as exempt by the institutional review board of the authors' institution.

RESULTS

Characteristics of Window Blind–Related Injuries Treated in US EDs Based on the NEISS

There were an estimated 16 827 (95% confidence interval [CI]: 13 732–19 922) window blind–related injuries among children <6 years old treated in US EDs from 1990 to 2015 (Table 1). This

corresponded to an average of 647 injuries annually or 2.7 (95% CI: 2.2–3.2) injuries per 100 000 children. The mean age was 2.6 years (SEM: 0.1; median: 2.0 years; interquartile range: 1.4–3.1) and 61.6% were boys. The location of the injury incident was documented for 77.9% of cases, and of those, 94.7% occurred at home. The majority of injuries occurred to the head region (65.3%) and were often diagnosed as a laceration (56.3%) or contusion or abrasion (22.7%) (Table 1). Most (93.4%) blind-related injuries were treated and released from the ED.

Among the 42.1% of injuries that specified the blind type involved, most were associated with horizontal blinds (75.7%) or shades (16.7%) (Table 1). Blind parts involved were documented for 93.6% of cases, and among this subgroup, 53.9% involved the entire blind unit, and 15.3% were associated with the blind cord (Table 1). Mechanisms of injury were specified for 98.8% of cases, and among these, 48.8% were "struck by," followed by "cut by" (18.2%), "struck on" (13.3%), and "entanglement" (11.9%) (Table 1). Among the entanglement-related injuries, 98.9% involved blind cords, 80.5% were to the neck, 29.3% were hospitalized, and 12.9% resulted in death. Entanglement was associated with 79.8% of the 726 children who were hospitalized and 94.3% of the 271 deaths.

TABLE 1 Characteristics of Window Blind–Related Injuries Among Children Younger Than 6 Years of Age Treated in US EDs, NEISS 1990–2015

Characteristics	National Estimates	
	N (%[a])	95% CI
Study total	16 827	13 732–19 922
Age, y		
<1	2104 (12.5)	1404–2804
1	3981 (23.7)	2787–5175
2	2744 (16.3)	1929–3558
3	3467 (20.6)	2636–4299
4	2296 (13.6)	1537–3056
5	2235 (13.3)	1441–3029
Subtotal	16 827	13 732–19 922
Body region injured		
Head	10 978 (65.3)	9107–12 850
Neck	2306 (13.7)	1587–3025
Hand	1878 (11.2)	1173–2582
Other	1659 (9.9)	919–2399
Subtotal	16 821	14 121–19 521
Diagnosis		
Laceration	9466 (56.3)	7791–11 141
Contusion or abrasion	3825 (22.7)	2889–4760
Anoxia	784 (4.7)[b]	293–1275
Other	2752 (16.4)	1893–3611
Subtotal	16 827	14 127–19 527
Disposition from ED		
Treated and released	15 717 (93.4)	13 159–18 275
Hospitalized	726 (4.3)[b]	378–1075
Fatality	271 (1.6)[b]	0–567
Left against medical advice	112 (0.7)[b]	0–243
Subtotal	16 827	14 127–19 527
Blind type		
Horizontal blind	5599 (75.7)	4617–6581
Shades	1234 (16.7)	749–1719
Vertical blind	559 (7.6)[b]	97–1021
Subtotal	7392	6224–8559
Blind part involved		
Entire window blind unit	8526 (53.9)	6768–10 284
Cord	2424 (15.3)	1506–3343
Rod and/or wand	1495 (9.5)	959–2031
Other	3359 (21.3)	2370–4349
Subtotal	15 805	13 266–18 344
Mechanism of injury		
Struck by	8148 (48.8)	6738–9557
Cut by	3033 (18.2)	2124–3942
Struck on	2229 (13.3)	1274–3183
Entangled	1979 (11.9)	1230–2728
Other	1314 (7.9)	675–1953
Subtotal	16 703	14 016–19 390

[a] Percentages may not sum to 100.0% because of rounding error.
[b] Estimate is potentially unstable because of a sample size <20 cases, an estimate of <1200 cases, or a coefficient of variation >33.0%.

Window Blind Cord Entanglement Incidents Based on IDIs

From 1996 to 2012, there were 231 IDI reports for window blind cord entanglement incidents among children <6 years old. The mean and median ages were 2.2 years (SEM: 0.1) and 2.0 years (interquartile range: 1.3–3.0), respectively, and 59.3% (137 out of 231) were boys (Table 2). Almost all (99.1%; 229 out of 231) of the incidents occurred at home, specifically in the bedroom (64.9%; 148 out of 228) or living room (26.3%; 60 out of 228). Nearly all (98.7%; 228 out of 231) of the entanglements involved the child's neck and were diagnosed as anoxia (77.1%; 178 out of 231) or an abrasion (19.0%; 44 out of 231). The majority of entanglements resulted in death (67.1%; 155 out of 231), and 8.7% (20 out of 231) of children were admitted to a hospital. Among the nonfatal cases, 11.8% (9 out of 76) were near misses without injury, and the remaining cases were diagnosed with abrasion (57.9%; 44 out of 76) or anoxia (30.3%; 23 out of 76).

The majority of incidents occurred while children were under the care

TABLE 2 Characteristics of Blind Cord Entanglement Incidents Among Children Younger Than 6 Years of Age, IDIs 1996–2012

Characteristics	No. Cases (%)[a]
Study total	232
Age, y	
<1	18 (7.8)
1	88 (38.1)
2	47 (20.3)
3	46 (19.9)
4	24 (10.4)
5	8 (3.5)
Subtotal	231
Location of blinds	
Bedroom	148 (64.9)
Living room	60 (26.3)
Other	20 (8.8)
Subtotal	228
Body part involved	
Neck	228 (98.7)
Arm	3 (1.3)
Subtotal	231
Diagnosis	
Anoxia	178 (77.1)
Abrasion	44 (19.0)
No injury	9 (3.9)
Subtotal	231
Disposition from ED	
Fatality	155 (67.1)
Not treated at a hospital	42 (18.2)
Admitted	20 (8.7)
Treated and released	14 (6.1)
Subtotal	231
Caretaker	
Parent(s)	204 (89.5)
Other	24 (10.5)
Subtotal	228
Child's last known status	
Put to sleep and/or asleep	95 (43.2)
Playing	74 (33.6)
Watching television	31 (14.1)
Looking out window	18 (8.2)
Other	2 (0.9)
Subtotal	220
Access to blind cord	
Bed	48 (21.3)
Crib or playpen	46 (20.4)
Floor	43 (19.1)
Couch or sofa	41 (18.2)
Other furniture	25 (11.1)
Other object	15 (6.7)
Window sill	7 (3.1)
Subtotal	225
Child's position when found	
Partially suspended	96 (54.5)
Not suspended	49 (27.8)
Suspended with feet above ground	31 (17.6)
Subtotal	176

[a] Percentages may not sum to 100.0% because of rounding error.

of parents (89.5%; 204 out of 228) and few were witnessed (2.6%; 6 out of 231). The child's last known status was often reported as placed to sleep and/or asleep (43.2%; 95 out of 220), playing (33.6%; 74 out of 220), or watching television (14.1%; 31 out of 220) (Table 2). Among cases of children who were not placed to sleep and/or asleep, 98 had the length of time left unsupervised documented, and of these, 11.2% (4 out of 98) were left unsupervised for <1 minute, 43.9% (43 out of 98) for <5 minutes, and 66.3% (65 out of 98) for <10 minutes. Children accessed blind cords from a bed (21.3%; 48 out of 225), crib or playpen (20.4%; 46 out of 225), floor (19.1%; 43 out of 225), or couch (18.2%; 41 out of 225). Of the 176 cases that reported the child's position when found, 17.6% (31 out of 176) were suspended with their feet above the ground.

Although the majority of incidents involved horizontal blinds (59.2%; 132 out of 223) and operating cords (76.4%; 159 out of 208), there were variations in the blind and cord types involved (Table 3). Among the 44 cases involving vertical blinds, 95.5% (42 out of 44) were associated with continuous loop cords. Of the 132 incidents attributed to horizontal blinds, 71.2% (94 out of 132) involved operating cords and 17.4% (23 out of 132) involved inner cords. Most Roman shade–related incidents involved the inner cords (85.2%; 23 out of 27) on the back of the blind. Among the 194 cases that specified entanglement mode, 43.8% (85 out of 194) involved cord loops that were part of the manufactured design, 23.7% (46 out of 194) involved loops formed by the inner cords, and 22.2% (43 out of 194) involved loops formed by knotted or tangled cords (Table 3).

DISCUSSION

More than 16 800 children <6 years old were treated in US EDs for window blind–related injuries during the 26-year study period, averaging 647 children annually or ~2 children per day. Most window blind–related injuries were not serious, and the majority of children seeking care in EDs were treated and released. Entanglement accounted for 11.9% of window blind–related injuries treated in US EDs, with 98.9% involving blind cords and 80.5% involving children entangled by the neck. This potentially lethal mechanism of injury has been the long-standing focus of the CPSC and other groups.[4,5]

Among young children, contact with window blind cords can lead to entanglement and strangulation. From 1996 to 2012, there were 231 blind cord entanglements reported in the IDI database and included in this study. Two-thirds of these entanglements resulted in death. Entanglement hazards vary by the type of blind and cord involved. Both looped and nonlooped cords present a strangulation risk to young children. Continuous loop cords, frequently found in vertical and roll-up shades, require proper installation and maintenance of a tension device. Without this component, the continuous loop is left hanging from the headrail, creating a strangulation hazard. Horizontal blinds and Roman shades have inner cords, which can present a loop hazard when pulled out from the blind. Although the current voluntary safety standard requires that these types of blinds be designed with inner cord stops to address this risk,[6] it is up to consumers to ensure that the cord stops are properly adjusted and that older blinds are retrofitted with inner cord stops. The percentage of households with properly adjusted or retrofitted inner cord stops is unknown; however, it is likely that many consumers are unaware of this recommendation or have not adhered to it.

TABLE 3 Frequency of Type of Blind Cord and Mode of Entanglement Associated With Entanglement Incidents Among Children Younger Than 6 Years of Age by Type of Window Blind, IDIs 1996–2012

Characteristics	Blind Type[a]							
	Horizontal, *n*	Vertical, *n*	Roman, *n*	Pleated,[b] *n*	Roller, *n*	Roll-Up, *n*	Unknown, *n*	Total, *n*
Cord type								
Operating cord	94	42	3	9	6	1	4	159
Continuous loop cord	5	42	2	4	6	0	1	60
Nonloop cord(s) ending in separate tassel(s)	43	0	1	2	0	0	1	47
Cords joined at the end with a clip and/or tassel to form a loop	25	0	0	3	0	1	1	30
Other and/or unspecified operating cord	21	0	0	0	0	0	1	22
Inner cord	23	0	23	0	0	0	0	46
Lift cord	0	0	0	0	0	3	0	3
Unknown	15	2	1	1	0	0	4	23
Subtotal	132	44	27	10	6	4	8	231
Mode of entanglement								
Loop as part of manufactured design	26	41	2	5	6	3	2	85
Loop formed by knotted and/or tangled cord(s)	39	1	1	1	0	1	0	43
Loop formed by inner cord	23	0	23	0	0	0	0	46
Nonloop cord(s)	12	0	0	2	0	0	1	15
Loop formed by tied cord(s) to other object	4	0	0	0	0	0	0	4
Loop formed above cord wind-up device	0	0	0	1	0	0	0	1
Subtotal	104	42	26	9	6	4	3	194

[a] Distribution of blind type in this table should not be interpreted to imply risk associated with each type of blind because of potential bias in the IDI sample and lack of exposure data for each blind type.
[b] Includes cellular blinds.

Other hazards result from cord loops not contained within the product design but created by consumers after installation. These loops are commonly created by knotted or tangled pull cords or cords tied to a stationary object, often in an attempt to keep them out of a child's reach. Injuries have also occurred when children have intentionally or unintentionally wrapped nonlooped cords around their necks. Therefore, it is important to keep all blind cords out of young children's environments. The similar strangulation hazard posed by cords and elastics longer than 12 inches on pull toys for young children has been recognized in federal toy safety standard specifications.[14,15]

The dangers associated with blinds are evident as toddlers gain mobility and become curious about their surroundings. Although possessing the motor skills necessary to access blind cords, they lack the cognitive ability to understand the risk of strangulation or the developmental maturity to free themselves once entangled. Window blind strangulation incidents can be fatal within minutes and can occur silently. In this regard, they are similar to child drownings. Accessible window blind cords should be considered as hazardous to young children as standing bodies of water. In addition, the notion that closer caregiver supervision can prevent window blind incidents is unrealistic because it is impossible to supervise children constantly, and these events can happen quickly. Primary prevention through product and environmental modification is the most effective approach.[16]

In 1996, the WCMA, in cooperation with the CPSC and the American National Standards Institute (ANSI), issued a voluntary safety standard to address looped window blind cords.[12] The standard has been revised 6 times, most recently in 2014, in attempts to reduce various strangulation risks associated with different window blind cord types and window covering products.[6,12] In this study we illustrate that despite these efforts, pediatric window blind injuries and deaths continue to occur, demonstrating the need to eliminate this hazard. To this end, in 2014, the CPSC unanimously approved a petition to develop a mandatory safety standard for window covering products. Unlike the current voluntary standard (ANSI/WCMA A100.1-2014),[6] which aims to reduce the risk of strangulation, the proposed mandatory standard would remove the hazard by requiring all window covering products be cordless or have cords that are inaccessible to children.[6,12] Cordless technologies are available for most blinds and shades and add little cost to manufacturing. In 2017, the WCMA proposed revising the current voluntary standard to eliminate the use of cords in all standard or "off-the-shelf" window blinds.[17] This would not apply to custom-made products, which comprise approximately one-quarter of the market.[17] Efforts related to the proposed mandatory and revised voluntary standards are ongoing.

Previous prevention recommendations have included the safe storage of blind cords, the use of retrofit safety kits, parental supervision, and education by physicians.[8–11,18–20] Although these measures can help reduce the risk of injury, their effectiveness depends on action by consumers. Injury prevention theory indicates that as the effort needed to implement a prevention strategy increases, its effectiveness decreases.[16] Even when child caregivers are aware of the safety hazard, they may not take action. One study revealed that 73% of parents surveyed were aware of the risk posed by window blinds, but only 23% had addressed the concern in their home.[21] Designing the problem out of existence, in this case by allowing the manufacture of only cordless blind, is the most effective strategy. This reengineering approach has been used successfully to prevent a variety of consumer product–related injuries, such as those associated with baby walkers.[22,23]

Although the need for mandatory safety standards requiring the elimination of window blind cords is clear, no such regulations currently exist. In the meantime, child caregivers should be advised of the dangers associated with window blinds and the preventive measures that can reduce injury risk. Whenever possible, blinds with cords should be replaced with cordless blinds, blinds with inaccessible cords, or other types of cordless window coverings, such as interior window shutters, draperies, and curtains. Retrofit kits to eliminate certain cord hazards are also available.[12] Cribs, beds, couches, and other furniture should be placed away from window blinds with cords to help restrict access by young children.

This study has several limitations. The NEISS underestimates the true number of injuries because it does not include injuries that are treated in a non-ED medical setting or do not receive medical care. Injuries treated in EDs do not represent the complete spectrum of injuries associated with blinds. In particular, the NEISS may not capture fatal injuries that are not transported to the ED or occur after inpatient admission. In addition, IDI reports are not a representative sample of all window blind cord entanglements and are likely to include more serious incidents of strangulation and near-miss strangulation. Therefore, entanglement risk associated with each type of window blind could not be evaluated because of potential bias in the IDI sample and lack of exposure data for each blind type. In addition, information in IDIs varies in its level of completeness and detail. Because of small sample sizes in this study, subanalyses could not be performed on some variables of interest. Despite these limitations, the NEISS and IDI databases provide important complementary information characterizing pediatric window blind–related injuries in the United States.

CONCLUSIONS

Many window blind–related injuries among young children treated in US EDs do not result in serious medical outcomes. However, strangulation incidents due to window blind cord entanglements continue to occur despite the existence of voluntary safety standards and risk reduction strategies intended to address these hazards. A mandatory safety standard that eliminates accessible window blind cords should be adopted.

ABBREVIATIONS

ANSI: American National Standards Institute
CI: confidence interval
CPSC: Consumer Product Safety Commission
ED: emergency department
IDI: In-Depth Investigation
NEISS: National Electronic Injury Surveillance System
WCMA: Window Covering Manufacturers Association, Inc

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