CPSC Staff's Statement[1] on Westat, "Effectiveness of Safety Devices in Reducing the Risk of Child's Access to Hazardous Cords and Loops: Final Report" and "Effectiveness of Safety Devices in Reducing the Risk of Child's Access to Hazardous Cords and Loops: Focus Group Final Report"

October 2016

The reports titled, "Effectiveness of Safety Devices in Reducing the Risk of Child's Access to Hazardous Cords and Loops: Final Report," and "Effectiveness of Safety Devices in Reducing the Risk of Child's Access to Hazardous Cords and Loops: Focus Group Final Report," present the findings of research conducted by Westat, under Contract CPSC-Q-15-0064.

The objective of the research was to provide CPSC with systematic and objective data on the factors that impact installation, use, and maintenance of safety devices; assess how these factors impact the likelihood of correct installation, use, and maintenance; and identify how the factors relate to the goal of reducing children's access to hazardous cords and loops.

Westat reviewed the window coverings and safety devices available in brick-and-mortar and online stores; performed task analysis to identify key issues and specific questions to be addressed in the focus groups; developed materials and procedures for the focus group; and conducted the focus groups.

Major findings from the study point to:

(1) A general awareness on cord entanglement among caregivers, which does not translate to precautionary action, due partly to the insufficient information provided at the point of sale;

(2) Lack of awareness of the speed and mechanism of the injury that may lead to caregivers' underestimating the importance of providing an adequate level of supervision;

(3) Difficulty using and installing safety devices as primary reasons for not using them; and

(4) Inability to recognize the purpose of the safety devices provided with window coverings. In general, participants preferred a cordless window covering or a passive mechanism, which does not require intentional action by the user.

Westat concluded that there could be benefits from enhancing the public's awareness and understanding of the unique nature of incidents (*e.g.*, speed, mechanism) and explaining a child's vulnerability in all rooms in the home, and that providing specific information at the point of sale, could

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[1] This statement was prepared by the CPSC staff, and the attached report was produced by Westat for CPSC staff. The statement and report have not been reviewed or approved by, and do not necessarily represent the views of, the Commission.

be partially helpful. However, Westat stated that these improvements would be incremental, and that increasing the use of cordless window coverings would be needed to achieve significant benefits.

The attached two reports describe the methods used in the study, and these reports explain Westat's findings regarding consumer awareness of the hazard, purchasing and installing safety devices, eliminating children's access to cords; using and maintaining safety devices, and final recommendations.

Effectiveness of Safety Devices in Reducing the Risk of Child's Access to Hazardous Cords and Loops

Final Report

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July 12, 2016

Acknowledgements

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Executive Summary

<u>Background</u>

This report documents the methods and findings of the CPSC project "Effectiveness of Safety Devices in Reducing the Risk of Child's Access to Hazardous Cords and Loops." There is a significant safety concern regarding injuries to children associated with window coverings, such as blinds and shades. In particular, young children may become entangled with accessible cords and loops, resulting in strangulation. The U.S. Consumer Product Safety Commission (CPSC) estimates that on average a minimum of 11 fatal strangulations related to window covering cord and loops occurred per year in the United States among children under 5 years old (CPSC, 2014).

The overall objective of this project was to "identify the factors that impact the installation, use, and maintenance of the safety devices and analyze how these factors affect the likelihood of customers correctly installing, using, and maintaining the safety devices with the goal of reducing the risk of a child's access to hazardous cords and loops." Although young children are the primary victims of entanglement and strangulation from window covering cords and loops, adults are the primary actors in terms of assuring safe installation and use. However, adults, whether parents of young children or other consumers, often have limited knowledge on how to reduce the risk of this hazard. This study examined different types of barriers that may prevent proper installation and use of safe window coverings and safety devices including risk perceptions, supervision habits, and costs and living conditions.

<u>Methodology</u>

The project employed a variety of approaches that taken together provide a comprehensive picture of consumer behavioral issues at each point in the process of consumer interaction with the product: pre-acquisition, purchasing, transmission of safety information, installation, use, and maintenance. The first stage of the project was a series of analytic activities conducted by the project team. The analytic tasks included a comprehensive review of source materials, store visits, review of website content, documentation of experiences purchasing window covering products online, and a hands-on installation and operation experience by the research team members.

Based on initial findings from analytical activities, focus group procedures were refined and implemented. The focus group participants included representatives from specifically defined consumer demographic groups. Each session included both group discussion and opportunities for participants to interact with specific window covering and safety device products. The findings of the focus groups were then integrated with the findings of the analytic tasks to provide a comprehensive set of findings.

An analysis was conducted to incorporate the results of the different analytic methods and the focus groups. A set of most-critical incident scenarios was identified, the product and environmental features that afford opportunity for these scenarios were delineated, and those affordances to aspects of adult behavior at various points along the chain of pre-acquisition, purchasing, installation, use, and maintenance were related in a summary matrix.

<u>Key findings</u>

The key findings of the study point to a general awareness among caregivers as to the potential hazard of cord entanglement. However, this awareness does not necessarily translate into action, via the use of safety devices or the purchase of safer products. Based on the study findings, the current information provided

about window covering safety is not likely to motivate an individual to actively change the window coverings in the home or to influence purchasing and installation decisions. This is likely due both to the dissemination methods as well as the content of the information which may not completely convey the hazards of window covering cords and loops.

Safety information presented at the point of sale is weak, in particular at non-specialized stores. Unless specifically searching for this information, it is difficult for consumers to learn about the risks and dangers inherent to certain types of window covering products. In cases where information is presented, including packaging, product displays, points of purchase, websites, instructions or labels, the information rarely provides a clear message or depicts the severity of the potential death or entrapment hazard.

Parents and caregivers are likely not aware of the speed with which children can be injured by window covering cords and loops and how quiet the incident may be. Therefore, in addition to the typical distractions that may prevent adult supervision in the home, in the case of prevention of access to hazardous cords, caregivers may not be fully aware of the characteristics of this type of injury scenario; and therefore, may not be cognizant of the level of supervision or the importance of safe products that may be necessary for prevention. In spite of reported hazardous child behaviors including dangerous play and interaction with window coverings only a fourth of the focus group participants reported actually making a change to reduce the hazard.

Mixed or negative reviews are indicated for the window covering safety devices based on both the analytic methods and focus groups. There are significant limitations to all of the safety devices, both aftermarket safety devices and devices that are provided with purchase of window coverings. There are frequently difficulties in installation for both window coverings and safety devices. Problems occur related to risk perception, cost, aesthetics, proper installation, routine use of safety devices, durability, child attraction, adult supervision, and compatibility with requirements for room furnishings.

<u>Recommendations</u>

The findings of this project suggest selected countermeasure actions that may improve safety. The recommendations addressed key countermeasure strategies: product improvement, consumer awareness and public actions. The principal finding regarding product improvement is the need for clearer information about hazards of window coverings and safety devices, transmitted in an easily understood manner, and required as a step in installation of a corded product. Nonetheless, as numerous issues were identified for corded products and safety devices, cordless products seem to be necessary in order to gain substantial benefits.

Recommended actions to increase consumer awareness of the hazards of cords and loops in window coverings and effect behavioral change include: public awareness efforts that provide further information and emphasis on the unique nature of the injury incidents as well as clarify that children are vulnerable to injury from window coverings in all rooms in the home; improved information on product safety at the point of purchase information in both retail stores as well as on product websites; raise awareness about danger to pets and children as a method to increase visibility.

Broader initiatives to increase use of safer window covering products are suggested for consideration, including promotion of the sale of exclusively cordless products by big box retailers; promotion of installation of cordless window coverings by management companies for rental homes; and consideration of alternative or improved designs for safety devices including improved aesthetics and availability.

1. Background

This report documents the methods and findings of the U.S. Consumer Product Safety Commission (CPSC) project "Effectiveness of Safety Devices in Reducing the Risk of Child's Access to Hazardous Cords and Loops." The overall objective of the project was to "identify the factors that impact the installation, use, and maintenance of the safety devices and analyze how these factors affect the likelihood of customers correctly installing, using, and maintaining the safety devices with the goal of reducing the risk of a child's access to hazardous cords and loops."

There is a significant safety concern regarding injuries to children associated with window coverings, such as blinds and shades. In particular, young children may become entangled with accessible cords and loops, resulting in strangulation. In a 2014 staff briefing package (CPSC, 2014), the CPSC summarized the extent of the problem, and consumer and child behavior issues related to these incidents. Between 1996 and 2012, there were 184 reported fatal strangulations and 101 reported nonfatal strangulations involving window covering cords and loops among children 8 years and younger (CPSC, 2014). Using separate data from the National Center for Health Statistics (NCHS) and a CPSC study, from 1999 through 2010, CPSC staff estimates that on average a minimum of 11 fatal strangulations related to window covering cords and loops occurred per year in the United States among children under 5 years old (CPSC, 2014). Emergency department injury data from the National Electronic Injury Surveillance System (NEISS) for 1996 to 2012 indicate that an estimated 1,590 children received treatment for injuries due to entanglements in window covering cords and loops (CPSC, 2014). The societal costs for deaths (1999-2010) and medically attended injuries (1996-2012) are estimated at approximately $110.7 million annually (CPSC, 2014). CPSC findings regarding the dangers of window coverings are similar to earlier reviews of this type of injury that pointed to the strangulation hazard of window covering cords and loops for infants and toddlers (Rauchschwalbe & Mann, 1997).

Although young children are the primary victims of entanglement and strangulation from window covering cords and loops, adults are responsible for assuring safe installation and use. Unfortunately, limitations in consumer knowledge and behavior may prevent parents and caregivers from providing optimal protection or taking all the recommended precautions to protect children from cords and loops used with window coverings. In a recent national survey conducted by Safe Kids Worldwide, 73 percent of surveyed parents indicated that they have heard of children strangling in window blind cords. However, only 23 percent reported that they made changes to their window blinds such as removing the cord or installing tension devices (Safe Kids Worldwide, 2015). Adults, whether parents of young children or other residents, often have limited knowledge regarding several key points:

- Poor appreciation of risks and incident scenarios;
- Limited understanding of relevant child behaviors related to play and exploration;
- Under-appreciation of rapid changes in developmental capabilities;
- Role of environmental aspects in providing affordance (e.g., climbing on furniture or
- use of sill);
- Role of others in providing access (e.g., other children, adult visitors who may not use products appropriately);
- Available safety features and devices;
- Methods and errors in proper installation; and
- Maintained effectiveness after installation.

To help address this problem, CPSC has initiated the present project to conduct an assessment of consumers' interaction with window covering safety devices that are currently available in the market and investigate factors that affect the installation, use, and maintenance of the safety device as part of the installation and use of the window covering.

The issue of why and how children gain access to hazardous cords has many aspects. In the analysis of the problem, multiple stages and a variety of important categories of factors operating at each stage were identified. The stages include:

- Pre-acquisition,
- Purchasing,
- Transmission of safety information,
- Installation,
- Use, and
- Maintenance.

The categories of factors include:

- Adult user characteristics;
- Physical and social structure of the home environment;
- Window covering features;
- Information sources and their use;
- Safety device features;
- User problems;
- Failure modes;
- Child affordances; and
- Relation to key injury/fatality scenarios.

Given this complex set of interacting factors, the research challenge was to find a way to address the problem in a reasonably comprehensive manner, within limited time and funds. To accomplish this, the Westat project team developed a research approach that encompassed a number of analytic and data collection methods. These methods are described in Section 2.0 and the primary results are summarized in Section 3.0. Section 4.0 discusses the major themes and primary factors associated with child access and entanglement with window covering cords and loops. Section 4.0 also details associated countermeasure recommendations.

2. Methods

2.1 Overview of set of methods

The project employed a variety of approaches that taken together provide a comprehensive picture of consumer behavioral issues at each point in the process of consumer interaction with the product: pre-acquisition, purchasing, transmission of safety information, installation, use, and maintenance. These methods fall into two broad classes: analytic activities conducted by the project team and new data from focus group discussion/product interaction with research participants. The analytic work integrated information about window covering products, safety devices, consumer behavior, safety experience, consumer information

sources, and product usability. Based on initial findings from analytical activities, focus group procedures were refined and implemented. The focus group participants included representatives from specifically defined consumer demographic groups. Each session included both group discussion and opportunities for participants to interact with specific window covering and safety device products. The findings of the focus groups were then integrated with the findings of the analytic tasks to provide a comprehensive set of findings. Figure 1 shows the sequence of steps in this approach. The sections that follow provide a description of the particular activities at each stage of this process.

Figure 1   Sequence of activities in the research approach
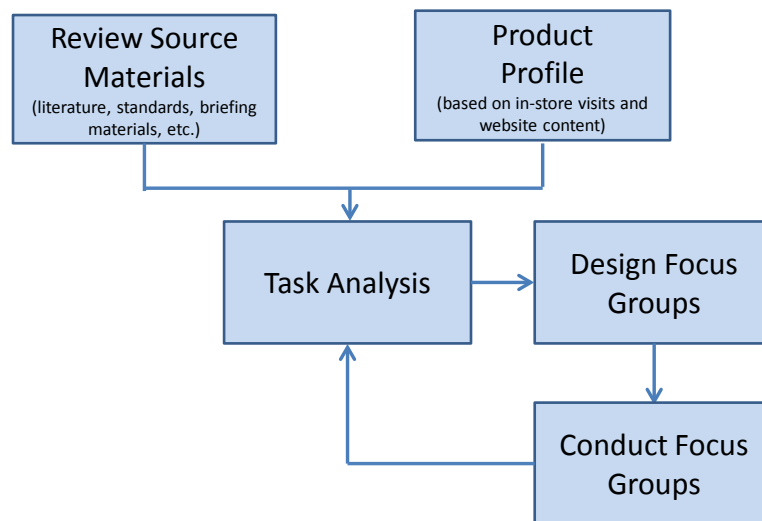
2.2 Review of source materials

A review was conducted to summarize available information on window cord and loop incidents, injury scenario features, relevant standards, available consumer information, and associated information. The review was intended to bring together key information available from a variety of sources related to the problem of entanglement with window covering cords and loops. For the purposes of the review the research team conducted searches and studied peer-reviewed scientific literature, related media materials, safety recommendations and standards.

The review was not intended to be an exhaustive review of primary sources or records, but rather a synthesis of key information from existing sources, supplemented by searches for recent information that might provide updates of these materials. The review document provides a descriptive summary of the current state of understanding of the problem and approaches to addressing the issue. Appendix A presents the complete review document.

Based on the review of source materials and in consultation with CPSC staff an initial list of eight different window coverings and four aftermarket safety devices was compiled (See Table 1). The product list included a variety of products representing a broad range of products available to the consumer, including more common products as well as different operating systems, safety devices and materials; for example each tension device was unique.

Table 1: Initial list of window covering products used to guide initial evaluation

Covering Type	Material	Safety Device
Honeycomb/ Cellular Shade	Fabric	Cleat
Horizontal Blind (Brown)	Faux Wood	Breakaway
Horizontal Blind	Aluminum	Cord Stop
Roller Shade	Fabric	Tensioner
Roller Shade	Fabric	Tensioner
Roller Shade	Fabric	Tensioner
Roller Shade	Vinyl	Tensioner
Roman Shade	Bamboo	Cleat, Cord Stops

Aftermarket Device	Function
Blind Winder	Retractable winding device
Wind Up	Rotate and Store winding device
Cord Winder	Free-hanging winding device
Cord Loop Tensioner	Tensioner

The list was generated to serve as an initial search tool during the store visits and reviews of retail websites. Eventually this list served as the first building block in the Product Profile discussed in Section 2.4.

2.3 Store visits

Research staff conducted a series of store visits in October 2015. The store visits provided information on point-of-purchase considerations as well as direct observation of a variety of window covering products. Five business establishments in the Rockville, MD, area were visited by the project team: two home improvement stores, one department store, one window covering specialty store, and one store specializing in products for infants and children. The product list (see Table 1) served as a search tool for different types of window coverings and aftermarket safety devices.

During the store visits, the research team paid particular attention to the window covering products and displays, packaging of products, and any display of safety messages and safety equipment in the store. The research team specifically noted the following issues:

- Is it easy to find a type of window covering?
- Is it clear what is included in the box – are there any safety devices included?
- Are there safety warnings on the box?
- Is a cordless option available?
- Do the displays of products exhibit use of safety equipment and exhibit safe installation?
- Does the display or product information encourage purchase of a window covering that is safe for children?
- Is it possible to cut the window coverings to size, choose the material, and customize as you would like?

Research staff also interacted with store employees and asked questions regarding the product characteristics and product safety, such as whether safety equipment was included with specific products and where it is possible to find safety devices in the store.

2.4 Website content

Research staff conducted a review of retail websites in order to gather more detailed information on window covering product features, options, costs and the installation process. The website content review also examined what types of safety-related information is offered to consumers online, including both general safety information as well as product-specific information. Seven large retailer websites were visited, encompassing a wide range of window covering products.

The research team noted similar questions as those identified for the store visits, including:
- Is it easy to find a specific type of window covering?
- Are the details of the product clear?
- Are the safety devices made available with the product?
- Do you need to request cleats or any other safety device?
- Is there a prompt regarding safety information/ safety devices/ cordless alternatives?
- Is there additional presentation of safety information during purchasing process?
- What types of customizable options are available during the purchasing process?

In addition, a review was made of aftermarket safety devices currently available online. Different types of devices were identified via a general web search as well as a review of window covering specialty stores. The safety devices identified included a variety of winding devices as well as different types of tensioners.

The methodology and results of the store visits and website content review were provided to CPSC in a detailed Product Profile report (see Appendix B). The original Product Profile report that was submitted to CPSC also included a sample product inventory which is an expansion of the initial product list and contained 30 different window coverings. The product inventory incorporated additional types of window coverings and safety devices that were not included in the initial product list (i.e. vertical blinds) as well as a broad range of safety devices and different points of sale. The inventory was organized by window covering product type (e.g., corded horizontal blinds) and provided information on the physical features of each specific product, the cord or loop, safety devices, safety information, installation requirements, cost, and links. Figure 2 shows a sample page from the inventory for a specific product. The complete product inventory is not included in this final report; it was submitted to CPSC as a separate deliverable due to the length of the document.

Figure 2: Example product description summary page from the product inventory

Product Name	Product Description		Cord Information		Safety Device	Safety Information		Installation Requirements	Web Source	Cost	Link	Comments
Hampton Bay 1 in. Economy Aluminum Mini Blind	CATEGORY	Horizontal Mini Blinds	TYPE OF CORD	Lift cord and wand tilt	Break away tassel and cord cleats included	PRODUCT PAGE	"This product complies with CPSC child safety guidelines. If you have children in your home on a regular basis, CPSC recommends the use of cordless window coverings." Includes warning symbols.	Requires a tape measure, drill, screwdriver, pliers, and fasteners. Instructions are two pages with several images. https://s3.amazonaws.com/homedepotmarketingimages/pdfs/503343+install.pdf	Home Depot	Starting at $20.79 for smallest size	https://blinds.homedepot.com/p/hampton-bay-1-in-economy-aluminum-mini-blind/205177071	Child Safety Information: http://www.homedepot.com/c/child_safety_for_blinds_and_shades_HT_BG_DC
	PRE-CUT/ CUSTOM	Custom	LENGTH OF CORD	Unknown		PACKAGE	Unknown					
						PRODUCT	Unknown					
	MATERIAL	Aluminum	CORDLESS OPTION	No cordless option available		INSTRUCTIONS	No safety information in instructions.					

2.5 Purchasing experience

Following the store visits, review of retail websites, and development of the Product Profile report, research staff documented experiences purchasing window covering products online. A short protocol was designed for recording information on the purchasing process including concepts such as clarity of information provided on the product design and safety, safety devices made available, cordless alternatives offered, prompts offered on hazards of products and options for customizing the product.

Based on the findings in the Product Profile and following the initial store visits and website review a specific set of window coverings was designated and approved for purchase by CSPC staff. A total of nine window covering products were purchased from five retail websites (see Table 2). These products were selected due to the fact that they represented a broad range of window covering types, materials, safety devices, and costs. The products were purchased online from home improvement stores, a department store, and stores specializing in window covering products.

Table 2: Window coverings purchased and reviewed during hands-on experience

Covering Type	Material	Safety Device
Honeycomb/ Cellular Shade	Fabric	Tensioner
Horizontal Blind (Brown)	Faux Wood	Breakaway
Horizontal Blind (White)	Faux Wood	Cleat, Cord Stops
Horizontal Blind	Aluminum	Cord Stop
Roller Shade	Fabric	Tensioner
Roller Shade	Vinyl	Tensioner
Roman Shade	Fabric	Cleat
Roman Shade	Bamboo	Cleat, Cord Stops
Vertical Blind	Faux Wood	Tensioner

In addition six different types of aftermarket safety devices were purchased (see Table 3). Five were purchased online and one in a store. The safety devices were primarily different types of winding devices, as well as an aftermarket tensioner.

Table 3: Aftermarket safety devices reviewed during hands-on experience

| Aftermarket Device	Function
Blind Winder	Retractable winding device
Cord Wind Up	Rotate and Store winding device
Cord Winder	Free-hanging winding device
Cord Wrap	Winding device using suction cups
Cord Clip	Cord cleat with adhesive
Universal Tensioner	Tensioner

2.6 Installation and operation experience

The purpose of the hands-on experience was to allow research team members to evaluate various window coverings and safety devices, in order to better understand potential challenges, mistakes and failures encountered by consumers that may lead to hazardous situations. This task focused on installation, use and

maintenance of window coverings as well as the transmission of safety information from the packaging, instructions and labels on the products.

For the purpose of the hands-on component a window covering demonstration and installation apparatus was designed and built (See Figure 3). The apparatus simulates the height and size of common windows. The apparatus allows for installation of different types of coverings, using both an inside and outside mount. The boards between openings were wide enough for installation of tensioners and cleats on the outside of the window openings. The apparatus was also designed to allow for installation of multiple window coverings on the same apparatus as well as for removal and replacement of products numerous times, which was important for this task as well as for the focus groups.

Figure 3: Window Covering Demonstration and Installation Apparatus
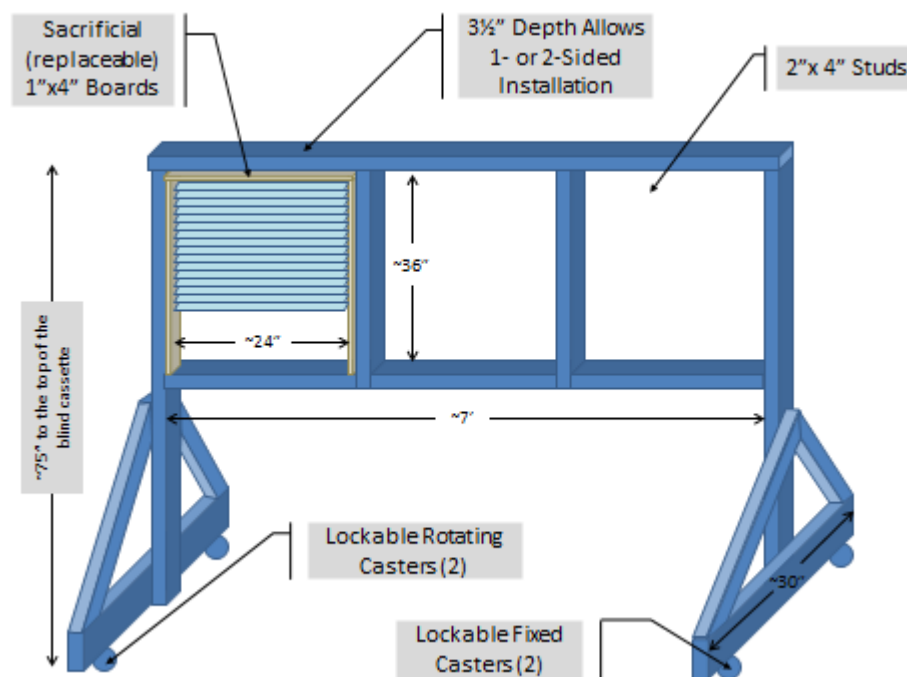
The first component of the installation and operation experience was a review of the window coverings. Initially, select members of the team conducted a pilot installation of two window coverings which included think aloud steps and a group discussion. Based on this early experience a detailed protocol was developed for the purpose of installation and hands-on testing of window coverings by several research team members.

The protocol for review of the window coverings installation and operation experience included the following key topics:

- Review of instructions;
- Evaluation of safety devices;
- Usability of the window covering;
- How children may interact with the product;
- Possible failure modes; and
- Subjective ratings of key issues for each of the window coverings.

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Figure 4 shows a research analyst interacting with a product she installed in the mounting apparatus.

Figure 4. Analyst interacting with window covering in mounting apparatus

The second component this experience was a review of the different aftermarket safety devices that were identified during store visits and in the website content review. These were reviewed in addition to the devices that were provided with the coverings (such as tensioners and cord stops). Similar to the window coverings, the evaluation of the aftermarket devices focused on a review of the instructions as well as the usability of the device. Some of the considerations asked of the reviewers include how easy or difficult it is to use the device, ways in which the device may fail and whether a consumer would consider installing this type of device in their own home.

Each team member was assigned three or four window coverings for assessment and each window covering was evaluated by three or four team members. In addition, each member evaluated two or three aftermarket safety devices. The team members had varying degrees of exposure and experience with these particular window coverings. This was to ensure that a wide range of observations, insights, and opinions regarding the window coverings was captured and would closely reflect those of a typical consumer. The protocol forms were reviewed and a summary of key themes and findings was developed. Appendix C presents protocols and instructions provided for the hands-on component.

2.7 Focus groups

Ten focus groups were conducted in Rockville, Maryland in Westat's User Experience Lab. A total of 67 people were recruited for the study. The introduction indicated federal government sponsorship and described the intent of the focus group to explore typical use patterns of window coverings and associated devices. A moderator's guide was used (see Appendix D) which provided explicit procedural details for all aspects of the focus group, including a specific question path and associated scripting. Each focus group session typically included 6 participants, was approximately 1½ to 2 hours in duration, and portions were audio and video taped for review and analysis.

Recruited participants included homeowners and renters, both with and without children. It is important to note that the participants without young children (under the age of 5) currently living in the home still had to meet the criteria that young children regularly visit their home. Older participants (age 65+) were also included in the study (both renters and homeowners). Participants were scheduled in homogeneous groups, such that homeowners with children were scheduled with other homeowners with children, renters without children were scheduled with other renters without children, etc. Table 4 outlines demographic characteristics of each focus group as well as the number of sessions conducted with each type.

Table 4.   Types of sessions

	Homeowner	Renters
With Children	3 sessions	3 sessions
Without Children	1 session	1 session
Older Adults	1 session	1 session

During the first portion of the focus group participants engaged in discussions that summarized their familiarity with relevant products, safety perceptions, willingness to use, and ratings on key dimensions. This included a section where they rated their familiarity with different aftermarket safety devices that could be used with corded window coverings.

As part of the pre-task discussion, several aftermarket safety devices were demonstrated. Each of these aftermarket safety devices is designed to keep loose cords out of the reach of children when the cord is not being used. Demonstrated devices included a Blind Winder, Cord Cleat, Cord Clip, and a Cord Wrap. The Cord Cleat, Cord Clip, and the Cord Wrap can be attached to the window or window frame, and the user manually wraps to the cord around the device when not in use. The Blind Winder allows the cord to retract into the device when not in use. Images of these devices are shown in Figure 5.

Figure 5.   Demonstrated aftermarket safety devices
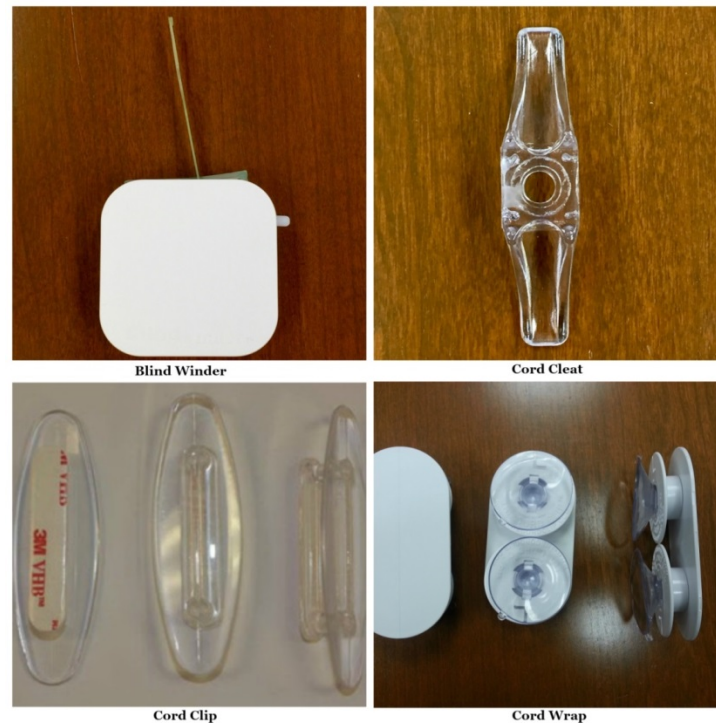
These safety devices were demonstrated in order to gain insight into each participant's previous experience. Participants were asked to indicate (using a written questionnaire) whether or not they were aware of each device, and if they had ever or currently used one in their home. Participants were also asked to share any thoughts or comments with respect to features they liked or disliked about each device, it's effectiveness, any problems they foresee with its use, and if they might consider purchasing such a device for their own home.

Following the initial discussion, the participants were exposed to selected sets of window coverings and aftermarket safety devices. Participants had the opportunity to operate and/or install various safety products, allowing direct experience with devices as well as an opportunity to objectively document user errors and problems. During the hands-on component, each participant was video and audio taped when working with the window coverings. Participants were instructed to "think aloud" to describe their thoughts and opinions as they worked with the different window coverings and safety devices, and each was also asked a series of questions about their experience.

A total of seven different window coverings were selected from those tested by the research team during the in-house installation and operation experience. Given the time constraints of the 90 minute focus group, the window coverings were divided into two subsets of four coverings each (Set A and Set B). Each participant tested either Set A or Set B, and every participant in a given focus group session tested the same set, so that everyone experienced and could discuss knowledgeably the same window coverings. Since the aluminum horizontal blind is currently the most common blind used in households it was included in both sets (A and B) so all participants would have an opportunity to work with and discuss their experiences with this blind type. Each participant was given nine minutes to interact with each window covering.

Instructions were provided to participants for each type of window covering. These instructions directed each participant to use the window coverings (raising/lowering, changing slat positions, etc.), briefly review of any warning labels and the installation instruction manual, and perform an activity that involved a safety device (e.g. installing a cord tensioner, using a cord cleat, testing the cord breakaway device, and using an aftermarket safety device) specific to the window covering. Participants in subsets A and B were asked to perform a similar set of activities.

Table 5 identifies the selected window coverings, the assigned grouping, and the specific activity associated with that window covering.

Table 5.   Selected window coverings, set groupings, and associated activities

	Blind	Blind ID #	Operating Device	Activity	
Set A	**Faux Wood Vertical Blind**	A1	Continuous loop/ tensioner	Use tensioner	
	Cellular Shade	A2	Continuous loop/ tensioner	Install tensioner	
	Blue Corded Roman Shade	A3	Cord/cleat	Use cleat	
	Aluminum Horizontal Blind	A4	Cord	Use Aftermarket Device	Set A→ Cord Wind-up Set B→ Cord Winder
		B1			
Set B	**Green Roller Shade**	B2	Continuous loop/ tensioner	Install tensioner	
	Brown Faux Wood Horizontal Blind	B3	Cord/breakaway	Test breakaway	
	Bamboo Roman Shade	B4	Cord/cleat	Use cleat	

Note the activity for the aluminum horizontal blind was dependent on which set of window coverings the focus group participants were assigned. For Set A, the participants were assigned the Cord Wind-up, which functions by drawing the cord into the device and winding it around a spool. Set B participants were assigned the Cord Winder, which functions as a cleat. It does not need to be attached to the window frame or the wall rather it hangs suspended in the cord. Figure 6 shows an image of the two different devices assigned to the aluminum horizontal blind.

Figure 6.   Aftermarket safety devices tested by participants

Wind-Up   Cord Winder
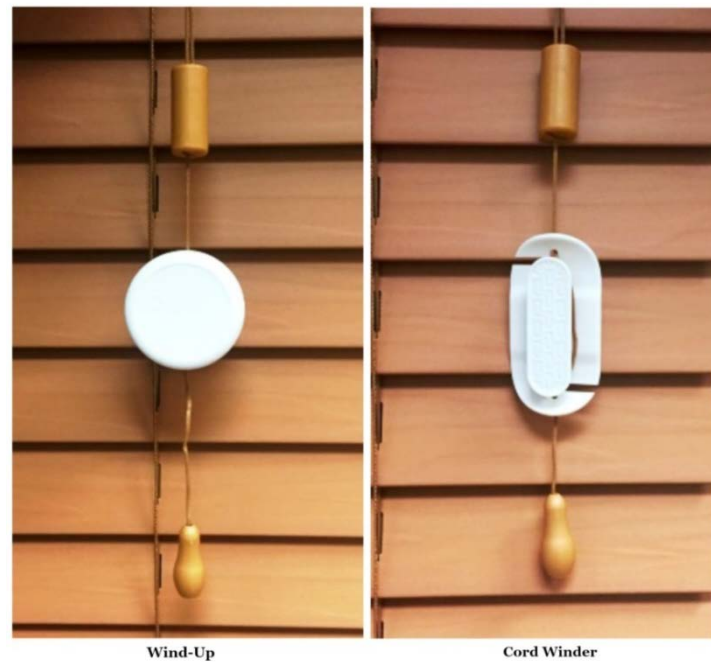
After operating each window covering and performing the assigned activity, participants responded to a set of questions (usually 5-8 questions) that pertained to the participant's experience with the window covering and safety devices.

After each person had an opportunity to work with the different window coverings, participants returned to the focus group table for a post-task discussion based on their experience. Post-task discussion topics included: perceptions of safety products presented; overall opinion of the window coverings related to ease of use; overall effectiveness; ease of installation; problems and errors experienced in trying to install and use safety products; response to warning labels and installation instructions; perceived barriers to installation and use; factors associated with their willingness to purchase (cost, availability, etc.); response of children to products, and user acceptance (specific topics are outlined in the moderator guide).

All sessions were led by a trained moderator and study participants were compensated $75 for their time. The study was approved by Westat's Internal Review Board (IRB) and by the U.S. Office of Management and Budget (OMB). The complete focus group methodology and participant demographics are described in more detail in the report titled "Effectiveness of Safety Devices in Reducing the Risk of Child's Access to Hazardous Cords and Loops: Focus Group Final Report" submitted as a stand-alone document to the CPSC.

3. Results

3.1 Summary of information sources: literature, store visits, websites
The different source materials contributed to a comprehensive picture of the nature of window cord and loop entanglement incidents and demonstrated some of the distinct characteristics that are likely to be of influence in these hazardous scenarios. While much of the information has been reviewed previously, in particular in the CPSC briefing package, the current effort focused on integration and synthesis of the existing materials.

Appendix A provides more comprehensive information on the current literature, standards, and injury scenarios and Appendix B provides further details on the store visits and websites.

The information sources, including literature and source material, store visits and websites point to specific factors that relate to three primary levels: individual level, this includes both the child and the adults; the environment; and the product. Summarized below are select unique features at each of these levels that can be contributors to incident behavioral scenario.

Individual Level

In reviewing the source materials it is evident that the populations at-risk for injury from window covering cords and loops are children under age 5 years (CPSC, 2014). The CPSC In-Depth Investigations (IDIs) were primarily of toddlers ages 17 months to 5 years of age. In addition, most of the victims investigated were boys. Toddlers, age 1 to 4, are more mobile and physically independent but they still lack basic decision-making capabilities which make them more vulnerable to injury (Cordovil et al. 2015). The injury type attributed to window coverings is predominantly suffocation following the entanglement of a child's head or neck in the cords or loops. Based on the descriptions of injury scenarios common behaviors of children prior to the injury were playing with cords and climbing up to look out the window and getting entangled in the cords or loops (CPSC, 2014).

Research has shown that parents find that direct supervision is often interrupted, due to a variety of factors, such as distractions, additional children claiming attention, or lone parenting (Ablewhite et al. 2015). In the case of younger children, parents often overestimate children's knowledge and understanding of safety and injury risk which may also effect supervision (Morrongiello, Midgett & Shields, 2001). In addition, there are some characteristic situations in which caregivers do not anticipate that direct supervision is necessary such as naptime, during a short bathroom break, or while situated very close by (i.e. "washing the dishes in the next room") (Morrongiello, Ondejko & Littlejohn, 2004). Parents may also believe that having an older child in the room is suitable supervision.

In a review of websites we found that stories about children fatally or severely injured due to entanglement in window covering cords and loops have received recurring attention in local, national and international media (see Appendix A). A few resources for window covering safety were identified; in particular the organization, Parents for Window Blind Safety that recently developed a "Seal of Approval" for cordless window coverings. Caregivers may also encounter safety information on the CPSC website and Safe Kids Worldwide. However, awareness of the hazard may not translate to behavior change. In a recent Safe Kids Survey, although 73 percent of parents reported that they have heard of children strangling in window blind cords; only 23 percent made changes to their window blinds such as removing the cord or installing tension devices (Safe Kids Worldwide, 2015). Based on a review of the source materials, it seems that having some safety device (cleat, breakaway device) led parents to believe that the window coverings were foolproof. There is also an indication that while exterior cords may be perceived as dangerous to children the inner loops may not be recognized as a hazard.

People do not replace their window coverings very often (DOE, 2013). Cost may be a factor; in cases where there are a lot of windows in the house replacement of coverings can be a significant investment. The average household reports 8.5 window coverings in their home. In addition, based on our review of products it is clear that the costs for cordless window coverings are often substantially higher (See Appendix B).

The CPSC IDIs indicated that those window coverings that were involved in injury events were installed by a variety of individuals, including homeowners, professionals hired by homeowners and/or rental agencies (CPSC, 2014). The review of information sources clearly points to the fact that whoever purchases and installs window coverings would need to conduct an informed and advance search prior to purchase in order to guarantee the selection of a safe window covering (See Appendix B). During a store visit or web purchase the prompts to specifically encourage purchase of a safe product are minimal. This lack of information is likely to preclude many individuals from purchasing or installing a safer product and from making the safest choice.

Environment Level

Corded window coverings are primarily a home safety issue requiring efforts by parents and caregivers to identify and act to correct a hazardous environment. CPSC IDIs and reports in the media point to injury events that occurred in a variety of rooms in the home, however, the incidents are frequently reported as taking place in the living room or child's bedroom (CPSC, 2014). Research has shown that mothers of toddlers perceive the living room, playroom and the child's bedroom as having a lower level of injury risk as compared to the bathroom and kitchen (Morrongiello, Ondejko & Littlejohn, 2004). Parents are also less likely to make environmental modifications in the living room instead they depend on supervision or choose to provide safety rules to a child to minimize risk. Finally, in the public rooms of the house the selection of window coverings may be more affected by aesthetics then safety.

An additional common characteristic related to the environment in these hazardous scenarios is the placement of objects that enable children to climb and reach the window cord or loop or the window covering (CPSC, 2014). These objects may include regular furniture, toddler furniture, temperature control elements, or other items.

Another factor that may directly affect hazards from window coverings is whether the home is owned or rented by the residents. While horizontal blinds are the most common product in all private homes, owned homes have more variety in types of window coverings while rental homes usually have low-priced horizontal blinds of metal and vinyl material as well as some vertical blinds (DOE, 2013). In addition to the difference in costs, individuals living in rented accommodations may not be permitted to install alternative window coverings or additional safety equipment. Finally, renters may not own the necessary equipment for installation of window coverings and safety devices, such as an electric drill (Ablewhite et al. 2015).

Product Level

More than 60 percent of all the window coverings in U.S. homes are blinds (DOE, 2013). Prices of window coverings vary, however, big box chains are the primary retail location for most types of interior window coverings. While there are some retailers that have eliminated sales of corded products, at many retail locations there is still a difference in cost between standard corded and cordless window coverings (See Appendix B). Families in a lower socioeconomic status may not have the resources to purchase cordless window coverings. As indicated above, horizontal blinds (typically a product with hazardous cords) are the most common in private homes. Horizontal blinds are generally the least expensive product on the market.

Most of the window coverings sold in the U.S. fall under the ANSI/ WCMA A. 100.1 voluntary standards which include a detailed series of labels, warning messages and pictograms (CPSC, 2014). While these labels are provided for packaging, on the product and in the instructions and include specific text tailored to the different types of window coverings, store visits conducted during the study revealed that the use of the labels is not consistent as to location or size (See Appendix B). In addition, in reviewing the different types of

warning labels some images portray an infant in diapers which may imply to consumers that cords are only dangerous to very young babies and not to older toddlers.

During store visits it was apparent that within large retail locations public safety messaging or clear display of safety devices is lacking. In addition, there are many products to choose from and labeling is not always clear as to which product is safer. Staff in retail establishments frequently did not appear familiar with the hazards of window cords or safety devices that mitigate the risk of injury and did not initiate any discussion of safety (See Appendix B). In addition, in some cases floor samples with safety devices were improperly installed. Specialty window treatment stores are an exception, staff there are more likely to be familiar with different types of window coverings and the safety aspects. The specialty store visited by the research team had safety-related information available in a prominent location, descriptive materials accompanying floor displays generally clearly indicated safety features or options, and staff were knowledgeable and forthcoming regarding safety issues and options. Overall more safety information is available on websites than in the brick and mortar stores. However, retail websites utilize a variety of terms for safety devices, and it is often unclear as to the safety equipment made available with a given product and what requires additional order or cost.

Prototypical Hazard Scenarios

An additional result of the review of information sources was the development of an initial set of factors common in prototypical accident scenarios, the factors are presented in Table 6. Examples of these scenarios were presented in the CPSC IDIs on child safety websites and in the media.

Table 6: Prototypical scenarios major factors

Victim	• Toddler age
	• Common behaviors (child is playing a game, thinks that the cord is a necklace / designed for neck, trying out a new movement, looking out the window)
Product	• Free standing cords
	• Loops that are free standing or loose on the tensioner
	• Inner cords able to be pulled between openings in a Roman shade or horizontal blind
Environment	• Bedroom
	• Living room/ Den
Means of Access	• Child climbs on furniture/ toy
	• Child climbs on window sill
	• Cord/ loop low enough that child can reach out and grab it to wrap around neck
Adult Supervision	• Victim left alone in bedroom for the night or for a nap (not expected to be awake)
	• Victim left alone by Parent/ Older Child for a short period of time (minutes)
	• Adult is in nearby room – distant supervision
Peer presence	• Victim is with sibling that is close in age, sometimes sibling is the "hero" who tries to save child
Adult pre-incident awareness, decisions	• Some parents purposefully purchase "safe window coverings"
	• Some parents made sure to use cleats, but forgot that day
	• Some parents had seen child play with window coverings previously and provided the child with safety messages.

The identification of key characteristics and hazard prototypical scenarios related to window coverings, serve as background material for the analytical stages of the study which include the online and hands-on experiences. These factors also represent those targets that safety devices and CPSC actions must address.

3.2 Summary of analyst experience: online experience, purchasing, installation

The analytical portion of the study consisted of three stages: continued review of internet sites for information on window covering safety and products; purchase of window coverings; and hands-on installation and use of window coverings by the research team. These findings are presented in greater detail in Appendix B and C.

Information available to consumers about risk of cords and loops to children

In reviewing retailer websites it is clear that for the most part, it is difficult for consumers to find information regarding child safety as relates to window coverings. The information about child safety and safety devices are often buried in the product pages and installation guides, which is not generally a place consumers might look when trying to find information on this topic. Unless specifically searching for safety information, it is difficult for consumers to learn about the risks and dangers inherent to certain types of window covering products. In addition, when purchasing the products, there is little information about safety. Most of the products contained a warning or image about child safety, but often that was the extent of the information. Even in cases where a specific web page provided information about child safety, it rarely depicted the gravity of the situation.

For the average consumer, the risk to children does not appear to be well-known and child safety information is generally difficult to find. Several retailers provide a webpage containing information about child safety for blinds and shades. These webpages are often difficult to find when navigating the websites. It appears that the information may be easily overlooked unless a consumer is diligently looking for the information and devotes a significant amount of time navigating the retailer websites.

Specific safety information provided by retailers online

On some retailer websites there is specific child safety information. The easiest way to find this information is to conduct a general search for information about child safety while naming specific retailers. A search on retailer websites may prove less successful.

One example of safety information is Home Depot that has an interactive link on pages with cordless window coverings, entitled "Cordless Blinds and Window Treatments for Child and Pet Safety" with a link to "Learn More". However, while this information seems helpful, it is something a consumer might overlook or ignore. Additionally, this interactive feature only appears when looking at cordless window coverings. When viewing corded window coverings, there is a much smaller link to information about child safety. It appears that most of the information regarding child safety and window coverings is found only after the consumer is looking for cordless window coverings, or window coverings that are safer for children. Other retailers have similar statements regarding safe window coverings.

One exception is the online specialty store Select Blinds which is unique in that the Child Safety information is stated on the homepage and specific information is provided up front regarding availability of cordless

window coverings. Select Blinds has a free cordless upgrade and has worked with Safe Kids Worldwide to promote free cord cleat distribution nationwide[1].

Regarding the content on child safety, all of these pages explain the hazards window coverings pose for children. They emphasize the use of child safety features and cordless window coverings. If consumers find these pages and do their research, they should understand the risk to children. The question, however, is how accessible is this information. Some retailers post the safety information on their home page, while others have it in less obvious places. So if consumers can find this information, they will be made aware of the risk to children. If consumers do not actively look for safety information, it is harder to gauge if consumers are made aware of the risks.

Direct information about safe alternatives or safety devices

It appears that the websites and retailers emphasize the features that already come with the window coverings. Some products included information about a cordless alternative, but there was little emphasis that cordless window coverings are safer for children. There is little information about safety devices that are not included with the window coverings packaging. Since there is a lack of information about aftermarket safety alternatives and options, it is nearly impossible for consumers to know the options that are available. There is little information about how to acquire safety devices that do not already come with the product.

Retailer support in making "safe purchasing decisions" during the purchasing experience

While making purchases online there were some decisions that were easily supported by the retailers. For example, it was easy to find a specific size or material. However, during transaction of a purchase online none of the specific products prompted a request for cord cleats or other safety devices. Additionally, most products did not have prompts with safety information during the purchasing process. In a few cases, the product page had the ANSI warning. However, it was often located in an easily overlooked section of the webpage such as at the very bottom, well below the product description and specifications, where a consumer is likely not to scroll.

Key themes from the research team hands-on experience

The hands-on experience enabled research staff to better understand the installation, use and maintenance stages consumers encounter in interactions with window coverings. The research team conducted a group discussion following the installation of several window coverings and identified a number of issues that may influence safety and potential use by consumers. These general findings include issues related to:

- Packaging - lack of visible safety information; separate packaging of safety devices; placement and size of labels on products.
- Instructions – languages offered and how multiple languages are presented; structure of written instructions; placement of safety information within instructions; lack of clarity.
- Aesthetics and design – safety devices or safer window coverings that are less aesthetic and desirable; window coverings or cords are designed in a manner that may be attractive to children - visual or other sensory attraction (sound/ touch).

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[1] http://www.businesswire.com/news/home/20160331005893/en/SelectBlinds.com-Commits-100-Percent-Cordless-Representing-Milestone

- Installation – complexity of task; time consuming; need for tools; need for persistence; feasible to tire or give up on installation of safety devices.
- Daily and long term use of product – likelihood that use of external safety devices will wane over time; cords likely to tangle or otherwise become dangerous over time; likelihood that tensioners will loosen; consumer unaware of potential developing hazard.

In reviewing the protocols completed by the research team during the hands-on experience, the general findings were expanded and several key themes emerged that relate to potential hazards for children from window coverings and cords. In general, these themes can be broken down into two categories: problems relating to incorrect installation and possible ways the window coverings or safety device could fail while being used (either due to faulty construction or user error).

Factors leading to incorrect installation of safety devices:
- Safety device installation is presented in the installation instruction as an "optional" feature.
  - Consumers "might not want to do the extra [optional] step, especially after a lengthy installation."
- The safety devices described in instructions are not included with window coverings.
- Safety devices, such as tensioners and cord stops, are not portrayed as important for child safety.
  - When reading the instructions for the vertical blinds, an evaluator noticed that the tensioner was called a "safety device." "The other [blinds] just said tension or cord guide."
- Instructions do not explain how to shorten operating cords.
- Safety devices are not attractive, user may not want to install them.
- Cords cannot be shortened.
  - For example, the cellular shade operated on a continuous loop, with no junction to allow it to be shortened, and then put back together.
- Instructions do not detail how high/taught the tensioner should be.
  - For most window coverings that had a continuous loop, a common observation was that the instructions provided "no information about where (how high) to install the tensioner / guide."

Possible failure modes leading to hazardous cord and loop access:
- Tensioners seem to be either breakable, or they may get pulled out of the wall.
  - One evaluator noticed that for the fabric roller shade, the cord guide "seemed flimsy, and it can twist sideways even when screwed in which can make cord tension tighter and looser."
- Cleat may not be used.
- Cleat not large enough to hold the entire cord.
  - If the user did not take steps to shorten the cord, an evaluator noted that for one set of horizontal blinds, the "cord cleat is too small –definitely can fail to use it correctly."
- Inner cord stops may not be positioned high enough.

Hands-on review of aftermarket safety devices

The hands-on review identified a number of issues that specifically pertain to the aftermarket safety devices.
- Most of the aftermarket devices served as alternative methods for the same function; that is, as winding devices in order to eliminate stray cords from reach of children.
- For the most part the devices included clear information as to the safety benefits;

- o Similarly, usually the instructions on use were clear and often included diagrams or visual figures.
- Excluding the blind winder retracting device, the research team asserted that the aftermarket devices are easy to install.
- Most require day to day action that does not completely eliminate the hazard once installed unless they are utilized in a manner similar to a cord cleat.
- Some show signs that over time the wear and tear would limit device effectiveness.
- Many devices are not aesthetic and may not appeal to consumers.

None of the aftermarket devices were found to be without some concerns or limitations. While several key themes are presented here; Appendix C includes further detail on each window covering and aftermarket safety product in the test set.

3.3 Summary of focus group findings

Key focus group findings are summarized as they relate to: consumer awareness and demographics, purchasing and installation, accessibility of the cord, and safety devices. Please see the Focus Group Final Report for a detailed presentation of the findings from the focus group discussions and the hands-on experiences.

Key findings regarding the consumer

In general, participants were aware of the potential hazard of cord and loop entanglement, but few participants expressed awareness regarding the issue of placing furniture, toys, etc. near windows that can afford access to cords. Participants cited news media and parenting forums as the primary sources for information on the topic of the hazards associated with window coverings. This hazard did not seem to be of primary concern for most of the participants, as one person stated, "Of all the things in my house that could kill my kid, the window blinds are low on my list." In addition, an awareness of the potential hazard does not appear to translate into many participants taking preventative measures such as the use of safety devices or relocation of furniture. Approximately one fourth of all the participants in each focus group session mentioned activities that appeared to be proactive with respect to window cord safety. That is, some purchased cordless window coverings in order to remove the child's access to the cord, purchased a cord cleat or other safety device, or simply tied the extra cord up moving it out of reach.

No specific demographic was identified as being more or less likely to install safer window coverings or safety devices to corded window coverings, other than first time parents. Several participants believed that first time parents tend to be more safety conscious, but this vigilance tends to lessen as the child grows older and with subsequent children.

There are some differences between homeowners and renters regarding the purchase and use of window coverings. In rental apartments, some people reported the window coverings are switched prior to each new tenant. This is more prevalent in large apartment complexes as opposed to private renters, and probably a part of the painting, carpet replacement, and general cleaning that is performed by the rental agency when the tenant moves out. Renters also indicated that while they may purchase and install window coverings on their own, this was less likely to take place and low cost would be an important factor. Homeowners were more likely to indicate that they may purchase new window coverings.

Key findings regarding purchasing and installation

Amongst participants in the focus groups, almost all of the homeowners indicated that they have purchased window coverings, compared to roughly half of the renters. There are two major factors that impact window covering purchasing decisions. First, there is the decision whether to change existing window coverings/devices. As indicated above, homeowners and renters are quite different with respect to this. Second, there is the decision related to which product to purchase. Participants indicated that cost was a primary factor with respect to whether or not they would purchase a cordless window covering or an aftermarket safety device. When purchasing window coverings participants were also concerned about the aesthetics and the durability of the product. Safety was also mentioned but with far less frequency.

In general, participants seemed to understand the need for the different safety devices and were appreciative of their function, but few admitted that they would purchase and use any of the safety devices that were presented. Instead, many participants were inclined to use homemade remedies such as tying the excess cord in a knot or bow.

Another interesting finding related to purchasing was the idea that cheaper products should be used if children are present because they tend to play with and break or damage the window covering. Participants seemed to express the opinion "Why pay more if they are going to wreck it." This logic seems to suggest that homes where safer treatments are most needed (e.g. children are present and may be interacting with the window coverings) will be those where the low cost, potentially less safe products are more likely to be installed and used.

When describing their behavior at home as well as their experience in the hands-on portion, participants felt there is little use for the instruction manuals. The participants in the sessions indicated that for the most part they do not read the instructions or installation manuals, at least not at first. A majority of the people admitted that they might glance at the instruction manual, but tend not to read it thoroughly unless they run into a problem with the installation. One participant said, "You don't look at them (the installation instructions) until you run into a problem." This sentiment was expressed by many others participants across the different groups. When asked to review the installation manuals during the focus group hands-on portion, participants felt that in general the instructions could be improved. Most manuals are too wordy and the graphics or illustrations were poor. Participants also recommended numbering all of the steps in the instruction manual in a uniform fashion, and providing graphics that are clear and instructive. Participants did not recall seeing safety information within the instructions, but did recall seeing it on the window covering and sometimes on the packaging for the window covering.

Several participants also suggested that any information pertaining to safety should be on the very first page and should be structured such that it attracts the consumer's attention. Conversely, since participants indicated that they do not usually read the instructions, it is likely that the manuals might not be the most effective way of conveying safety information or improving awareness of safety devices and safe practices. Participants did much better recalling on-product warnings and therefore perhaps the on-product labels could be modified to direct the participant to the safety device.

At home participants admitted that they do not use or install all of the equipment that comes with the window coverings. In fact, a few participants indicated that they specifically did not install the cord cleat that came with their window coverings. During the hands-on portion of the focus groups, participants often had trouble using or installing the different safety devices. Participants attributed their problems to the

instructions for the devices being unclear and to the way the different devices were manufactured. Most often they felt these devices were prone to error or failure because they were too bulky, heavy, flimsy, or could easily come apart or break.

Key findings regarding cord and loop accessibility

Several participants mentioned that several features of the window treatment or safety device could attract a child's attention and encourage play. Participants cited visual, auditory and operational aspects as well as play opportunities. Features were compared to necklaces (bead chains), pet leashes, and swords (rod). Children's interest in and modeling of adult behavior was also mentioned as a factor. Entanglement in corded window coverings and / or dangerous play patterns was specifically mentioned by three participants. A participant's daughter was playing in the living room by herself and when she checked on her, the child was completely tangled in the cord. In her words, "The cord was wrapped around her entire body and her neck. She was caught and could not move. It was kind of funny because of how helpless she was." Another participant mentioned that her daughter likes to put the cord around her neck, and pretend she is a leashed dog. A third participant mentioned a close call with a friend's child who they think was trying to climb on the couch and fell which resulted in the cord around his neck. This child was "ok", but suffered from rope burn.

Most participants mentioned that young children can be left unsupervised for a limited period of time in a variety of settings while engaged in different activities. Participants routinely said that they are comfortable leaving their children alone in a room while they were cooking; if the child was napping; while they shower; if there is an older child present to look after a younger child; if the child was occupied by a TV show, movie, or a tablet; and if the child was in the playroom. However, most agreed that the amount of time left unsupervised varied based upon the child's age and maturity. Certain rooms in the home were perceived to be more dangerous (kitchen, bathroom, and basement); and therefore, children were less likely to be left alone in these rooms.

Not all participants indicated they felt comfortable leaving a child alone. Some participants seemed hesitant and said they try never to leave children unsupervised. It is important to note that older adults as well as homeowners and renters without young children were more likely to be uncomfortable leaving child visitors in a room unsupervised for a period of time. Grandparents and other adults noted that when children visit it is usually for a finite period of time and the time is usually spent together. In those situations children are never unsupervised.

When asked if they ever discussed window covering safety with their own or visiting children, a majority of the participants said they did not. Some of the participants, who spoke to their children about the dangers of playing with the window coverings, admitted that telling children not to touch does not always work. A few people thought that when you tell a child under five years of age "no", it only entices the child to engage in the prohibited activity. Some participants indicated that at that age, children do not comprehend danger, and it is difficult to explain the concept of safety.

Key findings regarding safety devices

In general, participants were not very accepting of the aftermarket safety devices including the cleats and tensioners that were presented during the session. Participants understood and appreciated the fact that they addressed safety, but did not necessarily see them all as reliable or easy to use. They admitted they liked the concept, but noted the difference between liking and being willing to purchase.

In general, the cord cleat received the most positive reactions from all participants. Participants described it as sturdy, straightforward, and easy to use. Despite the fact that the cord cleat was relatively well received, participants still admitted that they would be unlikely to use it all the time. Among those participants who installed a cord cleat in their homes, most admitted that they do not use it all of the time. Participants indicated that they were less likely to use the cleat if they adjust the window coverings frequently, if the children did not seem interested in the window coverings, or if they simply forget. One participant was given a cord cleat by her social worker, but was never instructed on its function or how to install it; and therefore, never used it.

During the hands-on portion of the focus group participants took the most time to install the tensioners, and the least amount of time working with the Cord Winder and the breakaway device. However, for several demographic groups, the time spent on the Cord Wind-Up aftermarket device was comparable to the time spent on the tensioner.

Participants seemed most confused when working with the aluminum blinds (A4 and B1) and the two aftermarket devices (Cord Wind-Up and Cord Winder) that were paired with it. This may be due to the fact that a majority of the participants were not familiar with the aftermarket devices they were instructed to test, and they did not spend much time reviewing the instruction manuals for either device.

Examples of their confusion and frustration include the following:
- "It's supposed to break apart, I don't really know how."
- Video coder observation that the participant is trying to attach the aftermarket safety device to the window frame when it is supposed to hang freely in the cord.
- A participant throwing their hands up and saying "I can't get it to work!"
- "Oh, you lost me!"
- "Oh my god, this is so complicated!"

It is important to note that older homeowners experienced a greater degree of frustration when working with the roller shade and tensioner relative to other participants. Based on the follow-up discussion, this may be attributed to difficulty experienced when trying to install the tensioner. Participants in the older homeowners group specifically cited issues with arthritis and having a difficult time when attempting to fully compress the spring in the tension device.

The biggest complaint related to installing and using a safety device had to do with ease of use. In general, participants felt that most of the devices were somewhat cumbersome and they would not use them all of the time and therefore realize that they would not be as effective. Participants were also concerned with ease of installation and stability of the device. In general people seemed to be comfortable with drilling holes into the window frame or drywall so long as it ensured that the installed device was secure. However, since people seemed reluctant to use aftermarket devices this may be a moot point. As an alternative, participants suggested making all window coverings cordless or incorporate a passive mechanism which would not require physical action on the part of the user.

All safety devices presented were not immediately recognized as such. Often participants did not recognize the tensioner device as a safety feature. Participants also did not seem completely aware of how the tensioner installation impacted functionality of the window covering. That is, when the tensioner was not installed or not installed properly, it prevented the user from fully operating the window coverings. Approximately half of the participants did not notice a difference in functionality when the device was not installed and when it was

installed. The other half seemed to think the window covering performed worse when the tension device was installed. It is important to note that this is likely because the tension device was not properly installed and participant opinions might differ in their own home if the tensioner was installed properly. Additionally, very few participants seemed to understand that in addition to keeping the cord taut, the tension device made it less likely a child could insert his/her head in the looped cord. In general, tensioners were perceived negatively among focus group participants, but this may be due to the fact that few took the time to review the instruction manual when attempting to install the device.

When asked how to improve both the installation of and use of safety devices, participants said, "Safety devices should be a part of the window covering permanently to avoid the problem with the user taking it on or off." Participants also suggested better marketing and education. In addition to including a safety device with the window covering, it should be advertised on the box. The potential hazard should be fully explained, followed by an explanation of how the safety device has the potential to mitigate the problem.

Two cordless window covering models (a horizontal blind and a cellular shade) were demonstrated for participants in each session. In general, most of the participants liked the cordless options and said they would be willing to purchase a cordless blind as long as the cost was not prohibitive. Participants tended to prefer the cordless faux wood horizontal blind over the cordless cellular shade. Participants were partial to the cordless horizontal blind due to its ability to change the degree to which the panels are opened in order to get more light without having to fully raise the blind. In addition, participants seemed skeptical of the push button release on the cellular shade, suggesting that is might attract children or the push button mechanism has the potential to break.

3.3 Summary of findings

The task analysis incorporated the results of the different analytic methods and the focus groups. Based on these results and the key factors identified for hazardous scenarios a structure was developed for presentation of the findings (see Figure 7). The essence of this approach is to identify a set of most-critical incident scenarios, understand what product and environmental features afford opportunity for these scenarios, and then relate those affordances to aspects of adult behavior at various points along the chain of acquisition, installation, use, and maintenance.

Figure 7. High-level structure of task analysis synthesis
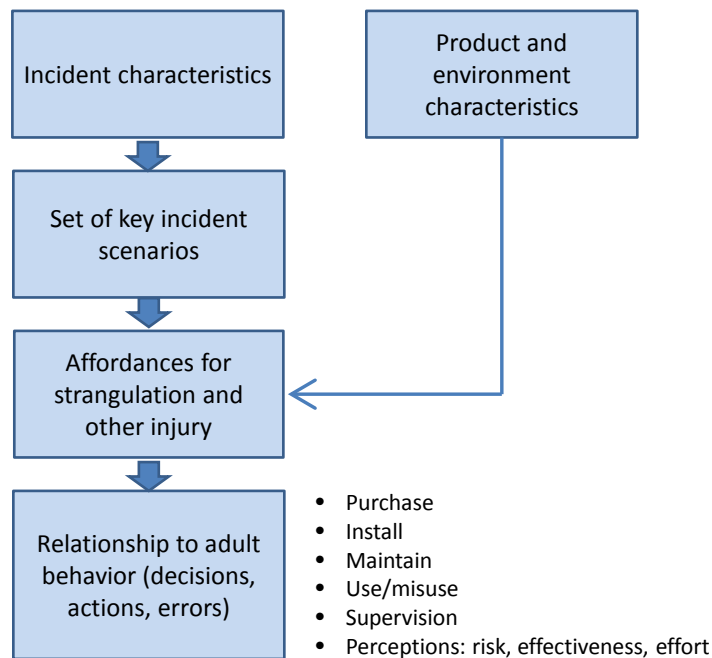
This high level structure was utilized to develop a detailed summary matrix that incorporates findings from the information sources, analytical components and focus groups in a standalone format. The primary section of the summary matrix reviews the presence of hazardous window coverings for each stage of the process from pre-acquisition through maintenance while examining an expanded list of factors than those that were initially identified as a result of the information source review (Table 7). The second half of the summary matrix examines the key affordances and characteristics of adult supervision that result in a child's access to hazardous cords (Table 8).

Each of the findings is listed as a statement in matrices, while the source for each finding is presented immediately following the statement according to the following key:

(1) Source Materials   (4) Purchasing Experience
(2) Store Visits   (5) Installation Experience
(3) Website Content   (6) Focus Groups

In some cases the same finding was identified in multiple sources, in those cases all of the relevant sources are listed.

Table 7 Hazard Presence Summary Matrix

	Hazard Presence					
	Stage of Process					
	Pre-acquisition	**Purchasing**	**Transmission of safety information**	**Installation**	**Use**	**Maintenance**
Adult user characteristics	• The parent/ adult is not safety conscious in general, does not consider this issue. (6) • Adult is not normally exposed to children, therefore does not consider this safety issue. (1) (6) • The adult has heard of the problem but does not relate it to behavior change. (1) (6)	• Lack of knowledge about the safety issue leads to purchase of window coverings that are not safe for children. (1) (6) • Older adults may have considerations related to ease of use that do not result in purchase of safe window coverings. (2) (4) (5) • Adult with interest in fashion/ decorating selects window coverings in accordance with this issue. (4) (6)	• Parent/ adult does not actively search for safety information therefore none is provided. (4) • Adult does not have children at home therefore not presented with safer options. (2) (6) • Due to barriers in understanding (language, reading comprehension) warning labels are not clear to consumer and safety action is not taken. (5) (6)	• Parent/ adult does not know about safety devices or how to properly install them. (6) • Parent/ adult does not own installation equipment or know how to use it. (1) (6)	• May not use safety features 100% of the time. (1) (6) • Parents overestimate their children's judgment of safety and install a window covering with a loop or cord. (1)	• Parent/ adult does not notice if cords are knotted/ten sioners loose. (5) (6)
Physical and social structure of home environment	• In a rental adult does not consider installing safe window coverings or adding safety devices. (1) (6) • Adults do not consider making changes to window coverings that are already installed in the home. (6) • Adults without children at home do not consider purchasing/ making changes. (6)	• Lower income results in purchase of less expensive window coverings that are not safe for children. (1) (6) • Due to the fact that child may ruin product, cheaper and less safe products purchased. (6) • No children in the home results in purchase of unsafe window coverings. (6) • Many windows in the home results in purchase of lower cost window coverings. (1) (6) • Window coverings that are not safe are purchased for rooms that "children do not use" or rooms that are considered safe. (6) • Rental home results in purchase and installation by agency/ renter that are not appropriate for child safety. (1) (6)	• Parents believe living room / dining room / bedrooms safer environment, do not perceive need for safe equipment in those areas. (1) • Older siblings may be responsible for child, information on window covering safety not conveyed to them. (1)	• No child in the house- safety devices are not considered relevant. (6) • Rental –cannot drill holes in wall. (1) (6) • Window coverings are in a room/at a height where children cannot reach. (6) • Devices poorly installed. (5)	• Safety features not used in rooms where children do not play. (1)	• Rental properties may not replace/fix window coverings. (6) • Too expensive to replace broken window coverings/de vices or window coverings that do not meet standards. (1) (6)

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Table 7 Hazard Presence Summary Matrix, Cont.

Hazard Presence						
Stage of Process						
	Pre-acquisition	Purchasing	Transmission of safety information	Installation	Use	Maintenance
Information sources and their use	• Information is not readily available to parents/ other adults about cord and loop safety (not a well-known topic). (1) (6) • Window coverings may be misrepresented as a safe product. (2) (3) (4) • Unaware of cordless options. (6)	• Big box chains are a primary source for purchase of window coverings, information on safety not available at most stores. (1) (2) • In the stores the sample products are installed in an unsafe manner can effect purchase and future installation. (2) • Employees in stores are not aware of safety issues. (2) • Safety information on websites difficult to access. (3) (4) • Safety information on packages is often not clear. (2) (6) • During purchasing experience online lack of "pop-ups" to inform consumer of need to buy safer blinds. (4)	• Warning images: shows an infant in diapers – could imply that cords and loops are only dangerous to very small children. (5)	• Instructions can be vague. (5) (6) • Safety device is marked as optional. (2) (5) • No height specifications for cleats. (5) • Instructions not used. (6)	• While in regular use safety labels or instructions are no longer accessible or conspicuous. (5) (6)	
Window covering features	• Existing window coverings in place do not consider need to make changes. (1) (6) • Cords not visible (for example in rear) do not consider a safety hazard. (1) (2) • Horizontal blinds are most common product in homes, in particular rental home, and are more likely to have loose cords. (1)	• There are so many products to choose from it is complex. (2) (4) • Window covering advertised as safe, in spite of loose cords, inner cords, accessible loops. (2) (4) • Cleat not sold with window covering and therefore there are loose cords. (2) (4) • Window covering selected for fashion/ design not safety. (1) • Aftermarket devices, including cleats, difficult to find in stores. (4)	• Window covering is perceived as safe based on lack of safety information on package/ website/ point of purchase and certain features such as inner cords are ignored. (1) (2) (3) (4) (5) (6)	• Cord is too long. (5) • No way to shorten blind/cord. (5) (6) • Inner/back cords are hidden from view. (5) (6)	• Window coverings have continuous loop or loose cords. (1)	• Poor quality can cause cords/chains to break. (5)

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Table 7 Hazard Presence Summary Matrix, Cont.

Hazard Presence					
Stage of Process					
Pre-acquisition	Purchasing	Transmission of safety information	Installation	Use	Maintenance
Safety device features • Cleat installed and adult plans to use it regularly, but do not remember to do so. (1) (6) • Tension device in place, do not realize it is loose. (1) (5) (6)	• Stores / Websites / Packages do not always make clear safety devices are necessary. (2) (3) (5) (6) • Packages do not clearly indicate which devices are included. (2) (5) • Website may not clearly indicate if safety devices included, or which devices are included. (3) (4)	• Clear information on purpose of safety device is not provided/ transmitted to consumer therefore not used. (5) (6)	• Tensioners –have to apply a lot of pressure to install correctly. (5) (6) • Device may not come with anchors for drywall. (5) • Safety device not attractive so choose not to install. (5) (6)	• Do not need to use cleats in order for window coverings to work (unlike tensioners). (5) (6)	• Loop can loosen from tensioner. (5)
User problems		• Information on safety device is not clearly provided leading to misuse of device. (5)	• Can be difficult/time consuming, especially when installing multiple window coverings at once. May not want to put the extra effort. (5) (6) • May not figure out how to install correctly. (5) (6)	• Time consuming to wrap cord around cleat. (5) (6)	
Failure modes	• Consumer believes purchase is of safe window coverings because of misinformation. (1) (2) (4)	• Safety device not used correctly. (5) (6)	• Cleat too low. (5) (6) • Cord stops too low. (5) (6) • Tensioner not taut when installed. (5) (6) • Tensioner not installed at all. (6) • Cords not cut. (5) (6) • Missing piece. (5) (6)	• Children can still access window coverings by climbing on furniture. (1) (6) • Cleat not used. (1) (6) • Tensioner not installed tightly enough. (1) (5) (6)	• Cords can become tangled, forming a loop. (1) (5) (6) • Tensioner can loosen from wall. (1) (5) • Tensioner can break. (1) (5) • Breakaway device not working. (5)

Table 7 Hazard Presence Summary Matrix, Cont.

	Pre-acquisition	Purchasing	Transmission of safety information	Installation	Use	Maintenance
Hazard Presence						
Stage of Process						
Relation to key scenarios	• In rentals or purchased homes no changes made to improve safety of existing window coverings. (1) (6) • Parents thought the window coverings in place are safe (inner cords). (1)	• Parents believe the window coverings they bought are safe and do not foresee injury mechanism. (1) (2) (4) (6)	• Parents did not clearly understand safety issues related to the window covering and the importance of using safety device. (5) (6)	• Cord cleats not installed. (6)	• One boy got caught in only two feet of cord. (1) • Parents did not use the cleat on the day of injury. (1)	• Breakaway device didn't work. (1) • Tensioner broke off wall. (1) • Cleat broke. (1)
Relevant countermeasure strategies	• Make information available to adults about window covering safety so that it is a consideration at all times (even prior to purchase). • Raise awareness about danger to pets and children, may increase visibility.	• Provide better feedback to consumers at point of purchase. • Better access to aftermarket devices (including cleats).	• Information on window covering safety and safety devices needs to be clearer and transmitted in an easily understood manner.	• Develop "attractive" devices. • Make sure installation of safety device is a required step. • Clearer instructions.	• Active safety devices do not leave room for forgetfulness or unexpected child behavior, may need to reconsider this safety measure.	

Table 8 Child Access to Hazard, Summary Matrix

	Child Access to Hazard	
	Affordances	**Adult supervision lapse**
Adult user characteristics	• Adult does not perceive danger of loops and cords. (1) (6)	• Adult has provided rules or reprimanded child, believes that this will suffice. (1) (6) • Parents find that direct supervision is often interrupted, due to a variety of factors, such as distractions, additional children claiming attention, or lone parenting. (1) (6)
Child development and characteristics	• Toddlers, age 1 to 4, are more mobile and physically independent their curiosity leads them to test out equipment in the home. (1) (6) • Boys have risk-taking issues may increase likelihood they will play with window coverings. (1) • Children try out a new game and play with cord. (1) (5) • Child interested in looking out the window while there plays and gets caught in the cord or loop. (1)	• Adults overestimate child development and capabilities and leave child alone with window coverings. (1) (6) • Parents have seen child play dangerously and provided guidance, believe that the behavior will cease. (1) (6)
Physical and social structure of home environment	• Placement of furniture or other equipment near window covering cords and loops. (1) (6) • A large window such as a sliding screen door may have longer cords / loops within reach of a child. (6)	• Siblings / other adults (not parents) are left in charge of child and are not aware of safety issues. (1) • Parents may believe that having an older child in the room is suitable supervision. (1) • Parents, other adults or siblings supervising may not hear the child playing in a room on a different floor or down the hall. (1)
Window covering features	• Cord or loop is attractive, looks like a necklace; child tries to play with it. (1) (5) (6) • Cord makes interesting / playful sounds. (5) (6) • Child attempts to lasso or jump with cord around neck. (1) • Inner cords are not tight child manages to put head in loop. (1) (5) • Voluntary standards do not effectively address 57 percent of the incidents. (1)	• Inner loops are not perceived to be dangerous to children. (1) (5) (6) • Adults do not visualize the use of the cord or loop as a game. (1)
Information sources and their use	• Information provided about product leave room for misconceptions, discourages use of safety equipment, resulting in higher likelihood that the dangerous cords or loops are available to child. (4) (5)	• Adult believes that the window covering is safe based on faulty information and allows child to remain alone next to window. (2) (6) • Parent has heard of window covering safety but this doesn't result in a behavior change. (1) (6) • Warning images: shows an infant in diapers –could imply that cords are only dangerous to very small children. (3) (4)
Safety device features	• Easy to remove cord from cleat. (1) (5) • Tensioner is not tight enough so child still puts head in loop. (1) (2) (5) (6) • Cord stops are too low so child can reach cords. (5)	• Adult believes that he always uses cleat and is not fearful of leaving child in room. (1) • Having some safety device (cleat, breakaway device) seemed to lead parents in believing that the blinds were foolproof. (1) (6)

Table 8 Child Access to Hazard, Summary Matrix, Cont.

Child Access to Cord, cont.		
	Affordances	**Adult supervision lapse**
User problems	• Window coverings are usually left in the same position throughout the day, may be likely to increase familiarity and allow children to think of methods to access cords. (1) (6)	•
Failure modes	• Child uses neighboring furniture, window sill, radiator or other equipment to climb up and reach cord. (1) (6)	• Forget to use cleat. (1)(6)
Relation to key scenarios	• Child disobeys parents' instructions and continues to play with window covering. (1) (6)	• Child left alone for a nap/ to sleep, found following injury. (1) • Adult leaves room for short time and injury event takes place. (1)(6) • Sibling left to supervise and child is injured. (1)
Relevant countermeasure strategies		• Need to clarify supervision is not the primary method to prevent injury, rather safe product design and use. • Need to clarify that there aren't rooms that are "safer" rather the product needs to be safer.

4. Discussion

4.1 Key findings

4.1.1 Consumer awareness

Based on the information gathered in the source review as well as in the focus groups, there seems to be a general awareness among caregivers as to the potential hazard of cord entanglement. However, this awareness or knowledge does not necessarily translate into action, via the use of safety devices or the purchase of safer products. This is particularly apparent as compared to other safety hazards in the home which are perceived as being of higher urgency (such as electrical, chemicals, fire and water). Only a fourth of the participants in the focus groups reported taking proactive action to prevent access to hazardous cords.

It is possible that the awareness is primarily superficial or general, without specific knowledge or appreciation as to the magnitude of the hazard. In addition, as is common with other safety issues caregivers believe that the injury is not likely to occur in their home. While some caregivers reported observing a child interacting in a hazardous manner with window covering cords and loops, it did not necessarily result in the caregiver removing the hazard, or taking other actions. Caregivers did not report regular use of safety devices or relocating furniture away from windows in spite of the dangers of access to window covering cords.

Current sources of safety information

Overall, there is little information on what might motivate users to retrofit or replace current window treatments with safer options. Based on the analyst experience in stores and online there is limited information on safety of window coverings. In some of the window covering specialty stores brochures are provided and the salespeople were capable of speaking knowledgeably about the different safety features provided with the coverings. However, for the most part during the purchasing experience the little information that is available will most likely only be viewed by individuals who make a special effort to locate safety information. These findings were supported by what was heard from participants in the focus groups when describing their purchasing experience.

Most participants in the focus groups indicated that cost, appearance, durability and quality, ease of installation, cleaning and maintenance, fit, and thermal functions as key motivators in their decisions related to the types of window coverings to purchase. Few participants, typically first time parents, referred to safety as the main factor impacting their decision to purchase a particular type of window covering. A few participants remembered seeing tags with safety information and images hanging from some displays. Even fewer participants actually recalled speaking to a sales associate about safety, and for those who did recall a safety conversation, it usually took place in a window covering specialty store. Therefore, it is likely that many consumers may not encounter safety information when replacing or purchasing window coverings as this is not a high priority during the purchasing and installation stages.

A number of participants indicated that the news media had featured stories related to children being seriously or fatally injured when interacting with the cords used for window coverings. However, many had felt that these stories were in the distant past, and that this was no longer a widespread hazard.

Some of the web sites and safety information include references to children and pets. Pets were also raised in the focus group as a method to increase interest, awareness and motivate changes in behavior among

consumers. While speculative, perhaps people find it easier visualize, or empathize with a pet being entangled in a cord.

Awareness across different demographic groups

Overall, awareness of the hazards of cords did not appear to differ greatly across the different demographic groups participating in the focus groups. Across the different focus groups several participants did indicate that first time parents tend to be more safety conscious. However, they also noted that this vigilance tends to decrease overtime as the child grows older or with the addition of subsequent children.

Participants seemed to understand the need for the different safety devices and were appreciative of their function, but few indicated that they would be inclined to purchase and use any of the ones that were presented during the focus groups. Instead, many of the participants were inclined to implement homemade remedies such as tying the excess cord in a knot or bow.

4.1.2   Purchasing and installation

Purchasing considerations

There seem to be two major components to the purchasing decision, each exposing different issues. First, there is the decision to change existing window coverings or safety devices, and second which product to purchase. There are a variety of factors that influence the decision to change the existing window covering in the home; however, based on the information gathered in the current study, safety is not likely to motivate an individual to actively change the window coverings in the home. As stated previously, most individuals consider cost, appearance, durability and quality, ease of installation, cleaning and maintenance, fit, and thermal functions when making purchasing decisions

Once an individual has decided to make a change to the home environment, they must select a product to purchase. Based on the source review and the focus groups, it is clear that safety is low on the list of factors influencing purchasing and installation decisions. Cost and aesthetics seem to be dominant factors influencing the type of window covering purchased.

There are a variety of reasons that may lead to a poor choice when purchasing the window covering, including lack of awareness or understanding regarding the safest products available. Some participants indicated that you are more likely to purchase a cheaper window treatment when children are living in the home because children tend to play with and/ or damage the window covering. However, this line of thinking indicated by focus group participants is in direct contradiction with the necessity to improve the safety of the environment where children are likely to be present as recommended by CPSC and other safety advocates.

Overall, participants appreciated the aesthetics and functionality of the cordless alternatives and indicated that if the price was not too prohibitive they would purchase this alternative, pointing to a need for products that are safe at a reasonable cost.

Purchasing experience

Safety information presented at the point of sale is weak. This is particularly true at non-specialized box stores. Both research staff and participants in the focus groups indicated they received little if any assistance or safety information during the purchasing experience. Some focus group participants indicated that safety information is available in the displays at the stores, but few took time to review it when making their

purchases. While the research team identified some window covering displays in the store, items often were not installed properly and the safety equipment was not secured correctly (i.e. loose tensioner, no cleat installed).

There is more safety emphasis on internet purchasing sites, but it too is often limited. In reviewing most retailer websites it is difficult for consumers to find information regarding child safety as relates to window coverings. It appears that child safety information is generally difficult to find; unless a consumer is diligently looking for the information and devotes a significant amount of time navigating the retailer websites it is likely that the information may be easily overlooked. The hazard and child safety information is often buried in the product pages or in the installation guides. Unless specifically searching for this information, it is difficult for consumers to learn about the risks and dangers inherent to certain types of window covering products. In cases where the information was presented it rarely depicted the gravity of the situation.

Instructions and labels

The findings of the current study indicate that instruction manuals are of limited help in promoting safety awareness among users. Focus group participants indicated that they often do not read the manuals or just skim them and safety information is often not noticed. This behavior was also repeated in the hands-on portion of the focus groups. Although instructed to review the instructions, participants often ignored them or minimally scanned the installation manuals. Participants felt that most times the instructions were too long and confusing. In some cases manuals intermingled multiple languages which made the installation steps even more challenging to follow. The images were often poor quality and not helpful. Overall, installation instructions received better reviews if they were structured such that they were direct and brief with clear photos or images.

Overall, safety messages were not recalled. Participants also indicated that when the safety information was present, it was often buried within the instruction manual, and therefore could be overlooked. If it is intended to be noted by the consumer, participants felt it should be placed upfront in a manner that draws the consumer's attention. Westat's in-house hands-on experience also pointed to the problem with product instructions, which are often difficult to understand. It was also noted that sometimes the safety measures provided, such as installing the cord cleat, were presented as optional steps in the instruction manual. Presenting the information in this manner serves to devalue the importance of the step and may also lead to consumers ignoring the information.

Product warnings placed on the window coverings appear to be more frequently noticed and comprehended. Participants were able to recall safety labels on the product including stickers and tags. Many were able to identify the general warning, but did not recall the specifics. That is, they could recall that the window coverings present a potential hazard to small children, but might not be able to convey the specific mechanism. Interestingly, in spite of their ability to recall the message presented on the warnings in the lab and at home, it still appeared to be weak in motivating action. While the warning labels appear to be more visible and memorable to the consumer than the safety information provided in the manuals, they still need some improvement to their design and the information provided in order to convey a stronger message.

Finally, participants report that they don't make use of all the equipment provided with the window coverings, which likely will decrease use of any type of safety equipment or devices that are not already attached to the window covering, i.e. cleats.

Renters and homeowners

With regard to considerations related to purchasing and installing window coverings, there are variations across different kinds of homeowners. A new homeowner may consciously make a decision not to change the existing window coverings due to costs. If the homeowner does purchase new window coverings they typically will replace the coverings room by room in order to limit the cost. Homeowners living in their homes for a longer period of time are less likely to make changes to the window coverings, an exception would be if a product breaks or during a major remodeling.

Overall, aesthetics and cost were the biggest factors when purchasing and installing window coverings and related safety features for both renters and homeowners. In addition, both renters and homeowners considered durability and quality, cleaning and maintenance, fit, and thermal functions when making purchasing decisions. Homeowners also considered ease of installation. Renters did not consider this as much given that the owner or the management company was typically responsible for the installation.

Renters may need to obtain permission to change their window coverings from the homeowner or management company. In some cases, renters indicated that the management company installs new window coverings prior to a new occupant moving in. In addition, renters seemed less inclined to purchase new window coverings if they viewed their home as temporary (2 or 3 years) compared to those who planned to engage in a more long-term rental (> five years).

There did not appear to be a difference with respect to homeowner versus renter opinions of the different safety devices. Participants in both groups preferred the cord cleat to the others safety devices presented. They cited durability and the security of the installation as their reasons for preferring the cord cleat. Neither group seemed to be very concerned about having to drill holes into the drywall or window frame. It is important to note however, that even though the cord cleat was preferred over the other safety devices, it was still not widely accepted. Participants indicated that they would be more inclined to implement homemade remedies such as tying the excess cord in a knot or bow instead of purchasing a device.

4.1.3   Child accessibility to cords

Adult supervision

Regarding the hazards of window coverings, the different information sources and the focus groups point to the fact that parents are likely not aware of the speed with which children can be injured by window coverings and cords and how quiet the incident may be (see also Review of News Articles, Appendix A). Therefore, in addition to the typical distractions that may prevent adult supervision in the home, in the case of prevention of access to hazardous cords, caregivers may not be fully aware of the characteristics of this type of injury scenario and therefore may not be cognizant of the level of supervision that may be necessary for prevention.

Similar to previous research on parental supervision (Morrongiello, Midgett & Shields, 2001; Morrongiello, Ondejko & Littlejohn, 2004; Ablewhite et al. 2015), focus groups participants indicated that young children may be left unsupervised for limited periods of time in a variety of settings during different kinds of activities. Furthermore, the participants indicated that certain rooms in the home are perceived as more dangerous (kitchen, bathroom, basement) than others (similar to findings in Morrongiello, Ondejko & Littlejohn, 2004). Living rooms, bedrooms, and playrooms are less likely to be associated with hazards from window coverings because children are less likely to be left alone in these rooms while awake or because the caregiver feels that they have implemented safety precautions for other types of hazards (i.e. outlet covers). In fact, those rooms

that are traditionally viewed as safer, such as children's bedrooms or playrooms, may actually host children unsupervised for longer periods of time, however, the products used in those rooms may not meet the recommended safety criteria.

Some caregivers reported that they had seen their children interact with the window coverings. Participants reported seeing children running their hands or actually running through vertical blinds because of the noise they make when they move; children using window coverings to hide behind; children raising and lowering the window coverings constantly, and children pretending that the window cord is a necklace, leash, etc. In spite of these reported behaviors only a fourth of the participants reported actually making a change to reduce the hazard.

It is interesting to note that focus group participants who do not have children in the household on a regular basis, i.e. some grandparents and other relatives, were more likely to indicate that when children visit they expect to supervise them at all times and tend to do activities together. This group differs from those individuals who have children regularly visiting the home and may not supervise them during their entire stay. Furthermore, none of these participants, those who do not have children in the household regularly, recall any dangerous interest in the window coverings.

Attraction to children

Adult participants felt that children may be attracted to certain components of window coverings, including any safety devices. Children may be attracted by visual, auditory, or operational aspects and take advantage of different play opportunities. During the hands-on experience and throughout the focus groups participants noted aspects of both the window coverings and safety devices that would attract a child's attention. When considering a child's imagination, various window covering features were compared to necklaces (bead chains), leashes, and swords (rod). Interest in and modeling of adult behavior was also mentioned. While participants were able to note this issue, this does not mean that the awareness would necessarily translate into preventive action.

Frequency of incidents

Entanglement or dangerous play with window coverings was mentioned by three participants in the focus groups. This represents 3/59 of all subjects (5%) and 3/36 of those with young children (8%). With a sample this small an actual estimate of real-world frequency cannot be determined. However, it is important to note that safety was not mentioned during the participant recruitment process but none the less three incidents among only 36 young child households were reported. This suggests that such incidents are not infrequent occurrences. Given that these situations arise in many households, it would seem that the awareness of the hazard would be greater and that appropriate safety behaviors be given higher priority by adult caregivers.

4.1.4   Safety devices

There are significant limitations to all of the safety devices, both aftermarket safety devices and devices that are provided with purchase of window coverings. In both Westat in-house analytical experience and in the focus groups there were mixed or negative reviews for most of the devices.

Installation

There are frequently difficulties in installation for both window coverings and safety devices. People often do not understand how to properly install the window covering or safety device and there may not be much

indication as to whether an installation was correct. As noted in a previous section, participants often noted that the installation manuals were often too wordy and confusing. While representing only a small number of individuals, there was a low percent of correct installs of safety devices in the hands-on portion of the focus groups.

As part of the installation instructions safety devices are sometimes cast as "optional." This may minimize the consumer perception of their importance and may lead to a decision to not use the device. The devices, or "recommended user actions," may not be seen as related to increasing the safety of the window covering or as a not very critical safety feature.

Of particular note are the different rates of successful installation for the two different types of tensioners that were used in the focus groups. The difference in success rates may be a result of how the tensioners function. One tensioner required that the consumer fully depress the spring during the installation for it to be installed and function properly. If the device was not installed properly, it did not allow the window covering to function fully. The other tensioner simply required the device to be secured to the frame during the installation in order to function properly. Improper installation of the devices may have resulted from installation instructions that were not clearly laid out for the user in the product manual, or from the fact that few of the participants took the time to thoroughly read the installation manuals.

Safety device use

Many of the aftermarket devices were not perceived as aesthetically pleasing in the focus groups and were not likely to be used by consumers. Overall, most participants were familiar with the cord cleat. Among the different safety devices that were presented, the cord cleat was most often present in homes, and was also in general considered most favorably. Participants indicated that they do not or would not use the cord cleats all the time. Participants often indicated that they have alternative methods to store extra cord length, in particular tying up the cords, which serve the same function without necessity of purchasing or installing an aftermarket device.

Maintenance

Window covering maintenance was one of the key factors in purchasing decisions. Universally, participants wanted window coverings that involved very little maintenance and upkeep. No participant in any of the focus groups was aware of any formal maintenance that needed to be done for any of their window coverings. Most participants admitted that they rarely even clean their blinds. A few participants said they will periodically dust the horizontal blinds in their home, but not regularly.

Overall, window coverings such as vertical blinds and horizontal aluminum blinds were viewed as flimsy because the actual blinds, cords, or wands would easily bend or break requiring the consumer to either fix them or purchase replacements. When aftermarket safety devices were demonstrated during the focus groups, many participants felt that these devices were flimsy, had the potential to fail, and might be attractive to children. So while they might be viewed as a potential solution by those in the safety community, most participants felt their presence would exacerbate the hazard.

4.2   Shortcomings and lessons learned

This project was designed to study the factors that impact the installation, use and maintenance of safety devices with window coverings in order to reduce child access to hazardous loops and cords. Throughout the project there were a number of lessons learned as well as a few shortcomings that were identified that are

important to consider in reviewing the current findings as well as designing future studies of this type, including:

- The research team found that analyst exposure to consumer experience (store visits, online search, purchasing and installation) was key to understanding the issues and also assisted in refining focus group path and methodology.
- While a broad range of products was identified in stores and on the internet and detailed in the product inventory, and a varied selection was made for use in the hands-on experiences by both the research team and focus group participants, this is still a limited sample relative to what is available to the consumer.
- Given the confines of the study, a small sample of analysts and focus group participants tried out the window coverings and the findings reflect this limited sample.
- People's experiences may differ at home compared to the focus group setting. The exposure to the different devices and coverings was limited.
- Focus group time allotted for interaction with each product was limited. Actual installation times could differ (very lengthy vs. quick) and could contribute to their overall opinions.
- Home visits with interviews might have been another useful source but not feasible within this project timeline or budget.

4.3   Recommendations

The key findings of this project suggest some specific countermeasure actions that may improve safety. The following recommendations are grouped based on key countermeasure strategies: product improvement, consumer awareness and public actions.

Product improvement

Numerous issues were identified for both corded products and safety devices. Problems occur related to risk perception, cost, aesthetics, proper installation, routine use of safety devices, durability, child attraction, adult supervision, and compatibility with requirements for room furnishings. There does not appear to be an effective method to correct all of the issues in a broad manner. Cordless products may be required in order to gain more substantive safety benefits. Other approaches may help somewhat, but are incremental. However, cordless products may not work well for some consumers, such as those with limited mobility or reach.

In general, adult supervision is not recommended as an exclusive tool to prevent child injury. Research has shown that there are often distractions that may prevent constant supervision, therefore safe product design and use is essential.

As a rule any information on hazards of window coverings and safety devices needs to be clearer, transmitted in an easily understood manner, and required as a step in installation of a corded product. Some additional specific potential improvements to current products that were identified in the study include:

- Improve on-product labeling and need for the consumer to have to interact with safety material and information.
- Safety devices that are to be used with the product should be attached to the product and not packaged separately as this may encourage nonuse or consideration of the equipment as extraneous or unnecessary materials. The potential hazard should be fully explained, followed by an explanation of how the safety device has the potential to mitigate the problem.

- Include a simple, stand-alone post-installation safety checklist. The information on product safety and on safety devices should not be buried in the instruction manual as these are not used as widely as might be anticipated.
- Provide a link to a website that demonstrates safe installation of window covering products and highlights safety issues.
- Designers of window coverings may consider features that might attract children (e.g. beaded cords, shiny and bright colors, interesting noises, etc.) and try to avoid incorporating these into the design.

Consumer awareness

A certain level of consumer awareness of the hazards of cords and loops in window coverings was evident in a variety of information sources and in discussions with focus group participants; however, this level of awareness does not generally translate to behavior change. Some recommended actions to increase consumer awareness and effect change include:

- Caregivers are not fully aware of the nature of the hazard, the speed in which an incident occurs, or how quiet it may be; future public awareness efforts likely need to provide further information and emphasis on the unique nature of these injury incidents.
- It is important that future public awareness efforts clarify that children are vulnerable to injury from window coverings in all rooms in the home and that those rooms that are generally considered to be "safer" may pose a threat as children are more likely to be left unsupervised in those locations.
- Improve point of purchase information in both retail stores as well as on product websites, the current information provided needs to improve both in content and visibility. Specifically the safety information should be a more prominent part of the in-store displays, packaging and as feedback during the purchasing experience online.
- Raise awareness about danger to pets and children specifically including the reference to pets when presenting information regarding the hazards may increase visibility, as it may be easier for people to conceptualize the injury incident as it relates to animals.

Public actions

Various broader initiatives to increase use of safer window covering products may be beneficial. Specific potential actions that the research team identified in the course of this study include:

- Encourage additional big box retailers to adopt sale of exclusively cordless products, as this is the primary point of purchase for many consumers. Increase information about cordless alternatives at retail locations where the level of safety information is minimal. These are likely the most effective actions to encourage future purchases of cordless alternatives by consumers.
- Promote installation of cordless window coverings by management companies for rental homes. Often these companies are furnishing numerous buildings and install new window covering prior to each incoming family. With new and less expensive cordless options available it is feasible to offer a cordless alternative. Consider a partnership with the U.S. Department of Housing and Urban Development to promote this activity, similar to previous efforts to reduce environmental contaminants in child care centers.
- Current safety devices are perceived as problematic both regarding their aesthetics and attractiveness to children. Alternative or improved device designs will need to address these issues specifically.

- The goal of a new outreach campaign could encourage retailers and manufacturers to increase availability of safety devices, including cord cleats, or organize stores so that consumers can easily locate safety devices.

Appendix A: Review of Source Materials

Introduction

The project "Effectiveness of Safety Devices in Reducing the Risk of Child's Access to Hazardous Cords and Loops" has the objective to "identify the factors that impact the installation, use, and maintenance of the safety devices and analyze how these factors affect the likelihood of customers correctly installing, using, and maintaining the safety devices with the goal of reducing the risk of a child's access to hazardous cords and loops."

As first steps in addressing these issues, Westat has developed two companion summary documents. One document, the "Product Profile Report", provides a structured summary of the range of common product types, their features, and related information. This document, "Review of Source Materials", summarizes available information on window cord and loop incidents, injury scenario features, the U.S. standard as well as other window covering standards, available consumer information, and associated information. Together, these documents provided a basis for subsequent analyses and helped to plan the consumer focus groups.

The "Review of Source Materials" was intended to bring together key information available from a variety of sources related to the problem of entanglement with window cords. It was not intended to be an exhaustive review of primary sources or records, but rather a synthesis of key information from existing sources, supplemented by searches for recent information that might provide updates of these materials. Based on these sources, this document provides a descriptive summary of the current state of understanding of the problem and approaches to addressing it.

Background

Unintentional injuries of children in the home are a serious concern each year in the United States. On average, more than 1,600 children aged 0 to 9 die in unintentional home injury deaths (Mack, Rudd, Micklaide, & Ballesteros, 2013). In a study of pediatric injury data, for children age 0-6, utilizing the Canadian Hospitals Injury Reporting and Prevention Program (CHIRPP), 64 percent of injuries occurred in the home with higher percentages among the younger ages (Flavin et al. 2006). The home environment is generally designed by and for adults, and often it is not compatible with child activity and safety. Young children are curious by nature and are exposed to ordinary household items that have the potential to cause injuries.

One of the leading causes of death among young children is suffocation (CDC, 2012). The Consumer Product Safety Commission (CPSC) has had an important role in ensuring the safety of consumer products for more than 40 years. One of the issues that the CPSC has targeted is improving the safety of homes by protecting children from dangerous or defective products. One product that has proven to be hazardous to children are window coverings, in particular the cords or loops that are designed to raise, lower, or cause some other type of motion to the window covering.

Between 1996 and 2012, there were 184 reported fatal strangulations and 101 reported nonfatal strangulations involving window covering cords among children 8 years and younger (CPSC, 2014). Using separate data from the National Center for Health Statistics (NCHS) and a CPSC study, from 1999 through 2010, CPSC staff estimates that on average a minimum of 11 fatal strangulations related to window covering cords occurred per year in the United States among children under 5 years old (CPSC, 2014). Emergency department injury data from the National Electronic Injury Surveillance System (NEISS) for 1996 to 2012 indicate that an estimated 1,590 children received treatment for injuries due to entanglements in window covering cords (CPSC, 2014). The societal costs for deaths (1999-2010) and medically attended injuries (1996-2012) are estimated at approximately $110.7 million annually (CPSC, 2014). CPSC findings regarding the dangers of window coverings are similar to earlier reviews of this type of injury that pointed to the strangulation hazard of window covering cords for infants and toddlers (Rauchschwalbe & Mann, 1997).

Although young children are the primary victims of entanglement and strangulation from window cords and loops, adults are the primary actors in terms of assuring safe installation and use. Unfortunately, it would appear that parents and caregivers are not taking all of the necessary precautions to protect children from cords used with window coverings. In a recent national survey conducted by Safe Kids Worldwide, 73 percent of surveyed parents indicated that they have heard of children strangling in window blind cords; however, only 23 percent reported that they made changes to their window blinds such as removing the cord or installing tension devices (Safe Kids Worldwide, 2015). Adults, whether parents of young children or other adults without children living in the household, often have limited knowledge regarding several key points:

- Poor appreciation of risks and incident scenarios;
- Limited understanding of relevant child behaviors related to play and exploration;
- Under-appreciation of rapid changes in developmental capabilities;
- Role of environmental aspects in providing affordance (e.g., climbing on furniture or
- use of sill);
- Role of "other actors" in providing access (e.g., other children, adult visitors who may
- not use products appropriately);
- Available safety features and devices;
- Methods and errors in proper installation; and
- Maintained effectiveness after installation.

Child development

Young children are exposed to varying hazards that are influenced by physical and cognitive-social capabilities that are acquired in each developmental stage. Physical development results in changes in height, reach, strength and dexterity all of which influence exposure to hazards. Similarly the cognitive and social development of young children leads to changes in characteristics such as curiosity, judgment and the ability to recognize hazards. For each stage of development there are issues that are important to consider in order to prevent child injury, including: supervision, access to hazards, and anticipation of risks (Flavin et al. 2006).

Toddlers, age 1 to 4, are curious and interested in exploring their surroundings. At this stage, children are more mobile and physically independent however, they still lack basic decision-making capabilities which make them more vulnerable to injury (Safe Kids Worldwide, 2009). Injury occurs as a result of a dynamic interaction between the child and the environment. Young children often misunderstand the consequences of their actions, and may take actions prior to development of abilities necessary to perform a task successfully. Their capability for different types of activity, or affordances, may be directly related to their risk for injury in a given situation (Cordovil et al. 2015). Caregivers have a role in managing affordances and recognizing limitations in accordance with the developmental stage the child has reached, while allowing for exploration and opportunities for learning. As children develop parents and caregivers need to anticipate the different types of injury risks inherent to the stage the child is in and develop appropriate strategies that will minimize risk of injury (Ablewhite et al. 2015).

<u>Parental Supervision</u>

Research has shown that parental supervision serves as a protective factor and can help to prevent injuries in young children inside and outside the home (Morrongiello, Corbett & Brison 2009; Morrongiello & Schell, 2010). Parents themselves have pointed to supervision as an important facilitator in preventing child injury (Ablewhite et al. 2015). Among younger children (under age 6) adequate supervision includes continuous and close care by a caregiver. The three dimensions of behavior that have been described as essential for supervision include attention, proximity and continuity (Morrongiello & Schell, 2010). If one of these dimensions is less rigorous, the result is a lower level of supervision which may be necessary to prevent hazardous situations for a child.

Parents will expend more effort in child safety if they believe that their child is more vulnerable to injury. However, parents may not engage in the highest level of supervision, including continuous attention and physical proximity to the child, in situations or environments which they deem to be safe. In addition, in the case of younger children, parents often overestimate children's knowledge and understanding of safety and injury risk which may also effect supervision (Morrongiello, Midgett & Shields, 2001). Parents have indicated that they do not always anticipate injury events or the severity of injuries that occur because of the child's age or developmental stage or because they thought they had taken preventive action (Ablewhite et al. 2015).

In an in-depth study with mothers of toddlers on in-home injuries parents perceived the living room, playroom and the child's bedroom as having a lower level of injury risk as compared to the bathroom and kitchen. Accordingly, the children were left alone for longer periods of time in these rooms (Morrongiello, Ondejko & Littlejohn, 2004). In addition, the parents indicated that they were less likely to make environmental modifications in the living room and depended on supervision or safety rules provided to the child to minimize risk (Morrongiello, Ondejko & Littlejohn, 2004). Conversely, CPSC staff found that bedrooms, living rooms, family rooms and TV rooms as locations where most window covering injury incidents occurred (CPSC, 2014).

Parents find that direct supervision is often interrupted due to a variety of factors, such as distractions, additional children claiming attention, or lone parenting (Ablewhite et al. 2015).

Often there are household tasks that need to be completed during a supervisory period that may lead to a lack of attention or proximity.

<u>Barriers to use of safety devices in the home</u>

Socioeconomic status and transient living conditions have been found to be obstacles to the prevention of unintentional injury in children in the home (Smithson, Garside, & Pearson, 2011; Ablewhite et al. 2015). Families with limited financial resources to purchase safety equipment or those who do not have the appropriate tools to install the equipment may be prevented from using safety devices (Ablewhite et al. 2015). Living in rented accommodations has also been identified as a barrier, as parents were unable to install safety equipment in a home they do not own (Ablewhite et al. 2015).

In reviewing the products available on the market CPSC staff indicate that retail prices for cordless products are generally higher than the retail prices for corded products ($15 to $130 more) (CPSC, 2014). Renting a home may deter consumers from installing safer window coverings. Under these conditions a resident may not have the option of installing a safer product. To promote installation of safer window coverings, it may be necessary for state and local authorities to develop regulations similar to provisions in some jurisdictions requiring landlords to install window bars in homes with young children residing.

Finally, in the case of homes that do not have a child resident, the adult may not perceive a risk to children who are visiting for short periods of time. This may deter the installation of safety equipment to prevent injury from corded window coverings.

<u>Window Coverings – Product Description</u>

Window coverings comprise a wide range of products including shades, blinds, curtains and draperies. Based on a survey with 2100 households in 13 major cities more than 60 percent of all the window coverings in U.S. homes are blinds (DOE, 2013). Among different window covering products, the horizontal blind category is the largest percent of the installed base, 27% of the window coverings are metal or vinyl horizontal blinds and another 16% are wood or faux wood horizontal blinds. It is interesting to note that among renters metal or vinyl horizontal blinds are substantially more common, accounting for about a third of all rental property coverings compared to a fifth of owner-occupied homes. The average household reports 8.5 window coverings and 2 covering types. Respondents of the survey indicate that they rarely move their window coverings, approximately 75%-84% of the coverings remain in the same position throughout the day (DOE, 2013).

In a review of the product pricing and sales based on data provided by manufacturers, metal and vinyl horizontal blinds were found to have the lowest price; both the median and mean price of these products was substantially lower. Approximately 60% of window coverings are distributed through retail channels, the remainder are sold through wholesale or distributors. Big box chains are the primary retail location for most types of interior blinds (35% of total distribution), including horizontal and vertical blinds. However, sales directly to the customer, for example via the internet, have grown. Manufacturers indicated that the consumer has also become more educated regarding the features and options available for window treatments (DOE, 2013).

There are a number of safety devices that are used with window coverings to reduce child access to the hazardous cords or loops; however, these devices are not defined in the current standard, and there is a variety on the market. The primary safety devices that were selected for evaluation in this study include:
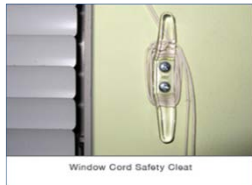
Cord cleats installed to loop cords around when not in use

Tension devices that keep the looped cord or bead chain taut

Cord retractors that retract the operating cord out of reach

CPSC staff found that while these safety devices have the potential to address hazards associated with window coverings when used correctly, based on the analysis of injuries from window coverings there may be higher levels of efficacy for passive devices that do not require effort from the users to maintain safety (CPSC, 2014). It is important to evaluate the use of both passive and active safety devices with users. It is likely that some level of active behavior may be necessary to achieve the anticipated rate of injury prevention (Gielen and Sleet, 2003).

Window Covering Product Standards

The American National Standard for Safety of Corded Window Covering Products (ANSI/WCMA A.100.1) includes cellular shades, horizontal blinds, pleated shades, roll-up style blinds, roller shades, Roman style shades, traverse rods, and vertical blinds. This is a voluntary standard whose objective is to provide requirements for covered products that reduce the possibility of injury, including strangulation, to young children from the bead chain, cord, or any type of flexible loop. According to the *Window Covering Manufacturers Association* (WCMA) the most recent revision of the ANSI/WCMA.A 100.1 included a number of more stringent requirements related to window covering cord and loop safety:

- Requirements for durability and performance testing of the tension/hold down devices, including new requirements for anchoring, specific installation instructions and warnings;
- Requirements for products that rely on "wide lift bands" to raise and lower window coverings;

- Requirements for warning labels and pictograms on the outside of stock packaging and merchandising materials for corded products;
- Requirements for testing cord accessibility, hazardous loop testing, roll-up style shade performance, and durability testing of all safety devices; and
- Addressed new innovations for controlling cords that do not use tension devices.

CPSC has worked with partner agencies in Australia, Canada, and the European Union (EU) to promote joint actions in improving the safety of corded window coverings. Over the last few years, updated regulations were introduced worldwide, including the latest version of the ANSI/ WCMA A. 100.1. In Europe the recently revised standards include: EN 13120:2009+A1:2014 'Internal blinds - Performance requirements including safety'; EN 16433:2014 'Internal blinds - Protection from strangulation hazards - Test methods'; EN 16434:2014 'Internal blinds - Protection from strangulation hazards – Requirements and Test methods for safety devices'. There are differences between the WCMA and European standards. CPSC engineering staff compared the two standards in detail and point to the areas of strengths and weaknesses in each standard as follows (CPSC, 2014):

- Cord Release Device/ Cord Shear Device vs. Breakaway System - The ANSI/WCMA standard appears to be more conservative as it requires the cord to breakaway at an average of 3 pounds compared to EN's 13.22 pounds.
- Cord tension vs. Fixed Tensioning system – The ANSI/WCMA standard is stronger because: 1) It requires the product to be installed by partially limiting the products functionality while the EN does not. 2) Even though the EN allows for a breakaway, the tested release force is 13.2 pounds which is more than the ANSI/WCMA version. 3) The ANSI/WCMA standard only allows products which a head probe can't be inserted, while the EN does not.
- Pull cords - WCMA is standard is stronger as it requires the cord release device to release the cord at an average force of 3 pounds while the EN allow for forces up to 13.3 pounds.
  The EN standard is stronger in terms of the following: 1) It ensures tangled cords become eliminated within 5 seconds of a 13.22 pound application, WCMA has no such requirement. 2) It restricts the length on continuous loop and breakaway pull cords to reduce access to the cord. If the product does not meet the length requirements, then the product must be fitted with an accumulation system to contain all the excess cord, not allowing more than 100 mm of cord when 60N is applied to it. The WCMA standard does not restrict the pull cord length and the cord retractor is an optional requirement. 3) In addition to the length requirement, it requires the pull cords to either be connected with a breakaway device, for less than 4 or less pull cords, or connected less than 50 mm below the head rail for more than 4 pull cords. WCMA standard does not have this requirement. 4) Does not allow for multiple separate cords without any other protection devices.   WCMA standard allows for multiple cords.
- Inner Cords - The WCMA standard is stronger because: 1) The head probe is inserted while the inner cord loop is held open with the force gage. However, the EN standard releases the inner cord after it was pulled and then the head probe is

inserted. The weight of the bottom rail could potentially remove the inner cord loop. 2) The WCMA standard also gives the option for inner cord stops, which the EN standard fails to mention.
The EN standard is stronger because it pulls on the inner cord with 50 N vs WCMA's 22.24 N.

- Cord Accumulation System – This is only in the EN standard, having an accumulation system can possibly keep the cord out a child's reach, however, at the same time it may pose a hazard similar to, Hazard 5. Loop created when pull-cord was tied to another object, usually on the wall.

According to the standard in Korea window coverings with U shape cords are required to have either a breakaway option or a passive guarding device. Separated cords need to be covered by long hollow covers or shroud devices. Following installation the bottom part of the loop cord must be fixed within 10 cm of the wall (Korean Mandatory rule for window-covering safety).

In reviewing the requirements for warning labels and messaging across the different standards for window coverings worldwide, there is quite a bit of variation. In both the U.S. and Canada (ANSI/ WCMA A. 100.1 and Z600-14) there is a detailed series of labels, warning messages and pictograms provided in the standards. Labels are provided for packaging, on the product and in the instructions and include specific text tailored to the different types of window coverings. In the European standard EN 13120:2009+A1:2014 there is guidance regarding the type of information to provide according to the safety device in the blind, without provision of exact text or pictograms. The Korean standard provides caution text for all blinds. The Australian Competition and Consumer (Corded Internal Window Coverings) Safety Standard 2014 includes the labeling requirements for installers, primarily to require that the warning labels on the products remain attached to the window covering. A comparison of the different types of warning requirements is available in the table in Appendix A-1.

In spite of the improvements to the safety performance requirements for window coverings under the 2014 ANSI/WCMA standard, in reviewing IDI findings for 249 injury cases CPSC staff found that the voluntary standard only addressed 25.7 percent of the investigated incidents (CPSC, 2014). The voluntary standards did not effectively address 57 percent of the incidents. In those cases for which pull cords or continuous loops are still in place, the current standard does not address the hazards to children, including entanglement in a loop created by knotted or tangled pull cords, entanglement in one or more long cords which the child wraps around the neck, entanglement in a loop above the stop ball of the cord, and entanglement in a continuous loop cord.

CPSC Engineering staff believes that window covering products which meet these three provisions in the voluntary standard continue to expose young children to hazardous loops (CPSC, 2014):

- Section 4.3.2 of the WCMA standard: the product shall have one or more separate operating cords.
- Section 4.3.7 of the WCMA standard: the product shall contain a cord tension device that will at least partially prevent the window covering from functioning for light control or privacy when not installed.

- Section 4.3.9 of the WCMA standard: the cord connector shall limit the exposed loop above the cord connector to less than 3 inches below the bottom of the cord lock when the bottom rail is fully lowered

Changes to the performance requirements in these three sections of the standard could effectively address the hazards associated with pull cords and continuous loops.

A petition was submitted by a number of non-profit organizations to initiate mandatory ruling regarding safety standards for window coverings that would prohibit window covering cords (CPSC, 2014). In cases for which a feasible cordless alternative does not exist, the mandatory standard will require that all window covering cords be made inaccessible via passive guarding devices.

<u>Public Information on Window Covering Safety</u>

In addition to the CPSC, which serves as a primary source for information about window covering safety and injury prevention, there are a few non-profit organizations that provide public information about this hazard. *Parents for Window Blind Safety* (PFWBS) is a non-profit organization dedicated to window covering safety. The PFWBS website includes statistics on injuries and links to stories of children who were severely and fatally injured by window covering cords and loops. In addition, the website has information about common causes of entanglement based on the research provided by the CPSC in-depth investigations. PFWBS developed a Seal of Approval for window covering products that may be displayed on product packaging in retail establishments. The PFWBS Testing Committee for the Seal of Approval is made up of a panel of human factors consultants, engineers, manufacturing consultants, attorneys from various fields, product safety experts, and PFWBS board of directors. According to PFWBS, products can only the Seal of Approval if all operating cords and loops are inaccessible. Kids in Danger (KID) and Safe Kids Worldwide (SKW) are additional non-profit organizations that provide more limited information on prevention of injury by window coverings.

Window Covering Safety Council (WCSC) was established by major U.S. manufacturers, importers and retailers of window coverings in order to educate consumers about window cord safety. WCSC supports Window Covering Safety Month, gives resources and examples on how to pick and install safe window coverings, and provides consumers with retrofit kits at no charge. The WCSC presents information on the "Best for Kids" certification program initiated by the Window Covering Manufacturers Association in 2015.

The *Window Covering Manufacturers Association* (WCMA) is an industry based association that represents the interests of the window covering industry manufacturers, fabricators and assemblers. The WCMA is responsible voluntary safety standard for window coverings ANSI/WCMA A 100.1-2012. In 2015 the WCMA initiated a "Best for Kids" certification program for window covering products. WCMA indicates that the Best for Kids program is a third-party certification program designed to help consumers and retailers identify window covering products that are certified as best suited for use in homes with young children. In order to participate in the Best for Kids program, physical samples of products must be submitted to the laboratory for review and analysis to determine if they meet the Best for Kids program criteria.

Products that meet these criteria will be eligible to be listed and labeled on packaging and materials as "certified," and companies can use this designation on their marketing materials. WCMA indicates that only cordless window coverings or those with inaccessible cords may meet the Best for Kids criteria.

Child injury from corded window coverings

The injury type attributed to corded window coverings is predominantly suffocation following the entanglement of a child's head or neck in the cords. Vascular occlusion may occur as a result of 2 kg (4.4 lbs.) of pressure on the neck. Minimal compression of the jugular vein or the carotid artery can lead to unconsciousness within 15 seconds and death in 2 to 3 minutes. Another scenario that may occur is compression of the vagus nerve which can result in cardiac arrest. The majority of the cases of child injury from corded window coverings reviewed by the CPSC resulted in a fatality, however, there were also cases that resulted in severe injury (CPSC, 2014).

In their review of the injury cases CPSC staff pointed to nine key hazardous entanglement scenarios (CPSC, 2014):

- a loop created by knotted or tangled pull cords;
- one or more long cords which the child wraps around the neck;
- a loop above the tassel;
- a loop above the stop ball of the cord;
- a loop created by the pull cord being tied to another object;
- a continuous loop cord that is free hanging;
- a loop created by pulling an inner cord of a horizontal blind;
- an opening between the Roman shade inner cord and the shade material; and
- a lifting loop detached from roll-up shade.

Stories about children fatally or severely injured due to entanglement in window cords have received attention in local, national and international media. In many of the news items the caregivers approach the media, as individuals or on behalf of the PFWBS organization, as a means to encourage more rigorous standards and safer practices among other parents. The coverage of child injury cases in the media often provides a short description of the injury scenario including the child's behavior and interaction with the window covering. Examples of descriptions of child injuries from window covering cords and loops in the media:

- *Erica and Stephen Thomas said they tried to make their toddler's room as safe as possible. They said they bought **shades that met the industry's voluntary safety standards**. The cord was always tied up to a hook on the ceiling, so Cormac couldn't reach it.*

  ***On March 1, Erica came into the room and found Cormac** lying underneath his window with his two favorite stuffed animals.*

  As she got closer, she noticed his lips and fingernails were turning blue. He didn't have a pulse. She called 9-1-1 and started CPR. But, it was too late. Cormac was pronounced dead at the hospital.

*As best she can tell, **Cormac put his head into the shades to look outside the window and got caught in the cords inside the shades**. [2]*

- *A toddler has been left paralysed for life after her neck became trapped in the cord of a window blind. **Emily Warner, two, was put to bed by her parents, but got up and was climbing across her window sill when the accident happened.***
She was found hanging unconscious by her father Jamie when he walked past her bedroom.[3]

There has also been media coverage of the CPSC activities to revise standards in multiple news outlets (see for example Feds Move to Protect Kids From Window Blind Cord Strangulation[4]). In addition, there have been news items related to changes in consumer products or sales, such as recalls or corporate entities that opted to phase out sales of corded window coverings[5]. See Appendix A-2 for a detailed compilation of media coverage on this topic as of 2011.

In reviewing cases detailed in the In-depth Investigations (IDI), CPSC briefing, on advocacy groups' websites and in the media it is clear that there are diverse circumstances surrounding these injuries. In order to organize the diversity of window covering injury incidents into a manageable and meaningful set of categories we propose that the following key scenario features and child and caregiver characteristics will be selected for summary:

1. Age
2. Stage of child development
3. Child behavior
4. Supervision (Parent, Sibling, Other)
5. Means of access
6. Environment (room, home, furniture etc)
7. Product
8. Interaction with window covering
9. Parent awareness of hazard

These factors will allow for identification of prototypical incident scenarios and they will provide the basis for the task analysis in the next phase of the study.

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[2] Summary from http://www.nbcnews.com/business/consumer/feds-move-protect-kids-window-blind-cord-strangulation-n222411

[3] Summary from http://www.dailymail.co.uk/news/article-2053700/Girl-left-brain-damaged-accidentally-hanging-window-blind-cord.html#socialLinks

[4] http://www.nbcnews.com/business/consumer/feds-move-protect-kids-window-blind-cord-strangulation-n222411

[5] http://abcnews.go.com/Business/ikea-removes-window-blinds-hazardous-kids/story?id=34170846

References:

Ablewhite, J., Peel, I., McDaid, L., Hawkins, A., Goodenough, T., Deave, T., ... & Kendrick, D. (2015). Parental perceptions of barriers and facilitators to preventing child unintentional injuries within the home: a qualitative study. BMC public health, 15(1), 280.

Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. National Action Plan for Child Injury Prevention. Atlanta (GA): CDC, NCIPC; 2012

Consumer Product Safety Commission Staff Briefing Package In Response to the Petition CP 13-2, Requesting Mandatory Safety Standards for Window Coverings October 1, 2014. Available at: http://www.cpsc.gov//Global/Newsroom/FOIA/CommissionBriefingPackages/2015/PetitionRequestingMandatoryStandardforCordedWindowCoverings.pdf

Cordovil, R., Araújo, D., Pepping, G. J., & Barreiros, J. (2015). An ecological stance on risk and safe behaviors in children: the role of affordances and emergent behaviors. New Ideas in Psychology, 36, 50-59.

Flavin, M. P., Dostaler, S. M., Simpson, K., Brison, R. J., & Pickett, W. (2006). Stages of development and injury patterns in the early years: a population-based analysis. BMC public health, 6(1), 187.

Gielen, A. C., & Sleet, D. (2003). Application of behavior-change theories and methods to injury prevention. Epidemiologic Reviews, 25(1), 65-76.

Mack, K. A., Rudd, R. A., Mickalide, A. D., & Ballesteros, M. F. (2013). Fatal unintentional injuries in the home in the US, 2000–2008. American journal of preventive medicine, 44(3), 239-246.

Morrongiello, B. A., Corbett, M., & Brison, R. J. (2009). Identifying predictors of medically-attended injuries to young children: do child or parent behavioural attributes matter?. Injury Prevention, 15(4), 220-225.

Morrongiello, B. A., Midgett, C., & Shields, R. (2001). Don't run with scissors: young children's knowledge of home safety rules. Journal of Pediatric Psychology, 26(2), 105-115.

Morrongiello, B. A., Ondejko, L., & Littlejohn, A. (2004). Understanding toddlers' in-home injuries: II. Examining parental strategies, and their efficacy, for managing child injury risk. Journal of pediatric psychology, 29(6), 433-446.

Morrongiello, B. A., & Schell, S. L. (2010). Child injury: The role of supervision in prevention. American journal of lifestyle medicine, 4(1), 65-74.

Rauchschwalbe, R., & Mann, N. C. (1997). Pediatric window-cord strangulations in the United States, 1981-1995. JAMA, 277(21), 1696-1698.

Safe Kids Worldwide, Raising Safe Kids: One Stage at a Time A study of child development and unintentional injury (March, 2009)

Safe Kids Worldwide, Report to the Nation: Protecting Children in Your Home, Washington D.C. February 2015

Smithson, J., Garside, R., & Pearson, M. (2011). Barriers to, and facilitators of, the prevention of unintentional injury in children in the home: a systematic review and synthesis of qualitative research. Injury Prevention, 17(2), 119-126.

Appendix A-1. Comparing requirements for labels and warnings across Window Covering Standards

Labeling Requirements	Locations for Warnings	Label Text	Pictogram
U.S. Standard ANSI/WCMA A100.1-2012			
Manufacturers shall provide, **on all window covering products with cords that are accessible**, warnings about the potential dangers of these products to young children. All warning labels and warning tags shall adhere to ANSI Z535 standards, and shall be provided in both **English and Spanish**.	Bottom Rail • For products without bottom rails, the label shall be placed in an alternative location on the product, to be determined by the manufacturer or importer, that is visible to the consumers.	Warning! Cords and bead chains can loop around a child's neck and STRANGLE. • Always keep cords and bead chains out of children's reach. • Move furniture away from cords and bead chains. Children can climb furniture to get to cords.	Pictogram of a young child with a cord wrapped around the neck, with a prohibition symbol (circle with a diagonal slash) covering the pictogram.
	Packaging on all retail products.	Warning! The cords on this product present a potential strangulation hazard. For child safety, consider cordless alternative or products with inaccessible cords.	Includes 2 pictograms that represent the hazard of a cord wrapping around a young child"s neck and a young child reaching for an accessible cord, with a prohibition symbol (circle with a diagonal slash) covering the pictogram.
	Product merchandising materials including order form, sample book, website.	Warning! The cords on this product present a potential strangulation hazard. For child safety, consider cordless alternative or products with inaccessible cords.	Includes 2 pictograms that represent the hazard of a cord wrapping around a young child"s neck and a young child reaching for an accessible cord, with a prohibition symbol (circle with a diagonal slash) covering the pictogram.

Labeling Requirements	Locations for Warnings	Label Text	Pictogram
	Operational warning tag – These differ based on the type of window covering: • Individual Tassel Cords and Cord Release Device (Custom vs. Stock blinds) • Cord with Cord Connector • Tension Device Warning Tag • Cord Retraction Device • Cord Shroud Warning Tag • Cord Shear • Horizontal and Pleated Blind with Cordless Operating System • Roman Style Shade • Roller Style blind	The warning provides unique instructions for each type of window covering. General warning messages: • Keep the cords and chains out of reach of children, • Move furniture away from cords and chains, • Children can climb furniture to get to cords, • Refrain from tying the cords together to create a loop	A pictogram of a young child with a cord wrapped around the neck with the universal prohibition symbol (circle with diagonal slash) on top of the picture shall also be included on the warning tag. Note – for Cordless, Roman, and Roller style shades the pictogram is of a hand pulling out the cord.
	Installation, Operational and Adjustment Instructions.	Instructions for length adjustable products which includes horizontal blinds, pleated, and Roman style shades that require inner cord stop devices.	Pictogram of the fully lowered product with a circle around the inner cord stops and adjacent headrail, and a detail of the circled area showing the cord stops located no more than 3 in (76 mm) below the headrail.

Labeling Requirements	Locations for Warnings	Label Text	Pictogram
European BS EN 16434:2014			
All information in relation to installation, use and maintenance shall be provided in the language(s) of the country of sale	The following information shall be given: • the name or trademark of the manufacturer or importer, • the type of internal window covering for which the safety device is designed and tested, • information on the use: purpose and possible limitations of the safety device, • a warning that the release of small parts could result in the internal asphyxiation of the child. In addition, the following specific information shall be given depending on the safety device concerned: • tensioning device: the suitability of the device for either a single cord loop, a single ball-chain loop, dual or any other combination, • breakaway device: the limits, if any, of the cord or ball-chain properties and characteristics (e.g. diameter) to be used in conjunction with a connector and the limits, if any, of the fabric properties and characteristics (e.g. thickness) which may affect the efficiency of the device, • accumulation device: the length of cord that can be accumulated by the device depending on the cord properties, • non tangling device: the limits, if any, of the cord properties and characteristics to be used in conjunction with the device, • inner cord stops: the limits, if any, of the cord properties and characteristics (e.g. diameter) to be used in conjunction with the device.		
Canadian Z600-14			
Labels required in English and French, the locations, **text and pictograms are analogous to the ANSI/WCMA A100.1-2012** **Specifically for products with Cord Cleats**: An additional message is to be included in the warning in the instructions or with the cord cleat package - Always wrap the cords around the cleats in a figure eight, up high, out of reach of children.			
Australian Competition and Consumer (Corded Internal Window Coverings) Safety Standard 2014.			
Labelling requirements - A person installing a corded internal window covering must: (a) attach a label to the corded window covering containing the name and contact details of the person or company responsible for the installation; and (b) ensure that any warning label or swing tag supplied with the corded internal window covering remains attached to the cord.			

Labeling Requirements	Locations for Warnings	Label Text	Pictogram
Korean Standard			
	Labeling should be "not easily erased" directly on the surface of the product or in the assistant tool (i.e. instructions).	Caution labels include: • Cord or bead chain can loop around a child's neck, Always keep the cord and bead chain out of children's reach. • Move furniture or things stepped from cords or bead chains. Children can climb furniture or chair. • To prevent strangulation accidents of children, please you must install tension device. • In case of install the blind, to prevent strangulation accidents of children, please raise the height the bottom part of cord to 160cm up.	Warning pictograms not included in standard.

Appendix A-2: Review of news articles relating to window covering cord safety
Access Dates 2011- October 2015

Parents for Window Blind Safety (nonprofit)
"Common ways of entanglement" (takes information from CPSC In-Depth Investigation File (INDP)
http://parentsforwindowblindsafety.org/safe-solutions/research/
- **Loops created by knotted or tangled cord**: Staff's review revealed that prior to the incidents, the pull cords had been tied together or had been coiled and tucked away (out of children's reach), but had later become accessible. When pull cords were tied together, a loop was created above the knot where the cords were tied and that is where the child later became entangled. When the cords were coiled, the cords also became tangled and created a loop, which later acted as a noose.
- **One or more long cords which the child wrapped around the neck**: In these scenarios, the child had wrapped the long pull cord(s) multiple times around the neck. When the child fell or tried to pull away from the window covering, the cord pulled back, causing the child to strangle or nearly-strangle.
- **Loop above a single tassel of the cord**: Some pull cords consist of multiple cords that hang from the window covering's head rail and are joined at a point, by a plastic or wooden tassel. In such configurations, a loop exists above the tassel. In the cases reviewed, staff determined that these loops were within the child's access and led to fatal or nonfatal strangulations.
- **Loop above the stop ball of the cord**: Some pull cords consist of multiple cords that hang from the window covering's head rail and are joined at a point, by a stop ball. The pull cord then continues down as a single cord. Similar to the single tassel case, a loop exists above the stop ball. In some of the staff-reviewed investigations, this loop acted as a noose where a child was caught.
- **Loop created when pull-cord was tied to another object, usually on the wall**: In 2 (2 percent)of the pull cord-related incidents, 1 (1 percent) of the fatalities, and 1 (3 percent) of the injuries associated with pull cords, staff found that the pull cord was tied to another object (e.g., a curtain rod). Tying the pull cord to another object created a "U" shaped opening where a child later strangled or nearly-strangled.
- **Unknown manner**: Eighteen (18 percent) of the pull cord-related incidents did not report sufficient information to allow CPSC staff to determine the manner in which the child was entangled. Twelve (18 percent) of the fatalities and 6 (18 percent) of the injuries involving a pull cord were included in this category.

"Injuries": http://parentsforwindowblindsafety.org/portfolio/category/injuries/
- Child, age 4, closed the door to his room, pulled a small plastic table next to the window so he could climb up and open the window.
  - How he became tangled is unclear, but his mother was downstairs making dinner and his father was in his study.
  - Injuries included bruising around the neck and face.
  - Cords were cut short and on a safety cleat.
- Boy, 11 months old was standing on a couch when he pulled at a blind cord and wrapped it around his neck.
  - His mother was in the kitchen for only a few minutes. Boy was in the living room with his two other siblings, oldest was 4 years old.
  - Oldest boy came into the kitchen to tell the mother that something was wrong.

- o Mother cut the boy loose and the boy started breathing.
  - o No long term injuries.
- Boy, age 3, was in his bedroom when he went to the window to look outside. He pulled down the blinds, thereby making the cord long enough to get tangled in. The boy managed to free himself.
  - o Parents were in the next room, with the door open and did not hear the struggle.
  - o Blinds were brand new with some safety features –had interior cord "locks" so that a loop could not be pulled out and the cord had no knots in them. With the blinds closed, the cord was only 2 feet long.
  - o The accident happened in a rental apartment. The family was unable to replace the blinds.
- Boy, almost 3 years old, got caught in a window blind cord in the living room.
  - o Mother was out of sight for 3-4 minutes in the adjoining kitchen and other 1-2 minutes in the living room before she saw her child struggling. Struggle did not result in any noise.
  - o Husband (asleep at the time of the accident) performed CPR.
  - o Family lived in a rental townhome. Mini blinds were the only option.
  - o When the mother complained to the landlord, he sent a handy man to install cleats on the window frame.
    - ▪ However, he was told not to install them on any frame that was more than three feet from the ground (this included the blinds that the boy got caught in).
- Boy, almost 3 years old, jumped off an armrest and put the window blind cord over his head, pretending to be Spiderman.
  - o Mother was in the kitchen making lunch when she heard her son say "I'm stuck" very quietly.
  - o Safety tassels were tangled together to form a loop.
  - o 7 year old brother and 3 year old sister were in the same room and neither noticed that their brother was being strangled.
- Girl, 3 years old, pulled out the interior cord and placed it around her head.
  - o Mother was in the kitchen, making breakfast.
  - o Father found his daughter, cut her down and started administering CPR.
  - o Girl is now severely disabled.
- Girl got caught in a blind cord in her room (age and details unknown) , resulting in severe disability.

Window Covering Safety Council
http://windowcoverings.org/
- Does not provide a lot of information on incidents, but it gives resources and examples on how to pick and install safe window coverings.

Girl, two, left brain-damaged after accidentally hanging herself on window blind cord (UK) – October 2011
http://www.dailymail.co.uk/news/article-2053700/Girl-left-brain-damaged-accidentally-hanging-window-blind-cord.html#socialLinks
- Father happened to be passing her room and found his daughter hanging in her room in a looped blind cord.

- Girl had been put to bed, but she got up, and stood on her bedframe and was climbing on her window sill when the accident happened.
- Although paramedics were able to stabilize her, she is now paralyzed and will be unable to walk, talk or feed herself.
- Incident took place in the United Kingdom, where looped cords on window blinds were legal at the time.
- **Toddler later died as a result of her injuries - http://www.dailymail.co.uk/news/article-2105415/Jamie-Warners-horror-finding-daughter-Emily-2-hanging-window-blind-cord.html

Toddler who choked on blind cord in Markyate was watching for friend (UK)–May 2012
http://www.hemeltoday.co.uk/news/more-news/toddler-who-choked-on-blind-cord-in-markyate-was-watching-for-friend-1-3880740
- A toddler (aged 2) who strangled himself on a blind cord was probably looking out of the window to see his friend arrive to play, an inquest heard.
- According to the coroner's report:
    - Boy went upstairs to collect toys to play with.
    - After a while, after not hearing from their son, parents opened the door to his room and saw the cord around his neck.
    - The boy died five days later.
    - Because there was a small stool next to the window, it is thought that the boy was looking out the window, waiting for his friend to arrive.
- The blinds had a looped cord.

How my four-year old was nearly strangled by a window blind cord – February 2013
http://www.dailymail.co.uk/health/article-2280794/How-year-old-nearly-strangled-window-blind-cord.html
- Boy, age 4, was visiting a friend's house, along with his brother and mother.
- The boy and his friend were in the room next door to where the mothers were sitting.
- Boy got caught in a loop on the venetian blinds as he and his friend were jumping off the window sill.
    - It is thought that the boys yanked on the cord (which was wound in a cleat) loose, making a loop.
- The boy's older brother, age 11, saw what happened and lifted his brother up by the armpits to set him free.
- Boy was unable to call for help because of the pressure on his voicebox.
- Minor injuries: bruising around the neck.
- The homeowner thought that she was being safety conscious when she wrapped the cord around the cleat.
    - Comments indicate that there is a false sense of security winding cords around cleats.
- Incident took place in the UK.

Blind cords in military housing lead to deaths –June 2013
http://www.usatoday.com/story/money/business/2013/06/22/window-blind-cord-deaths-military-housing/2442881/
- At least 10 children have died or been seriously injured as a result of strangulation on window blind cords in military housing where families frequently cannot make physical changes to the premises.

- Consumer Product Safety Commission Chairman Inez Tenenbaum and Defense Department Undersecretary John Conger are urging the companies that provide military housing to replace old window blinds with safer models.

Injured Toddler A Reminder About Dangers of Window Cords –July 2013
http://www.nbcwashington.com/news/local/Prince-Georges-Co-Officer-Credited-With-Saving-Childs-Life-215169511.html
- A three-year old from Oxon Hill was found tangled in a window blind cord (circumstance unknown).
- The toddler regained consciousness after given CPR by a police officer.
- The boy was hospitalized but expected to make a full recovery.

Four children die from hidden danger in the home –March 2014
http://www.wusa9.com/story/money/consumer/2014/03/19/window-cords-hidden-danger-deaths-children-cpsc-blinds-safety/6600157/
- Child, aged 2 ½ strangled on the inner cord of a Roman blind.
- Victim's parents had put the outer cord out of reach of the child's bed, but they did not know that the loop formed by the inner cord was also a hazard.
- Mother discovered son unconscious when she went to his room to wake him up in the morning. When she saw that he wasn't breathing, she called 911 and started CPR.
- Of the four fatalities in the last three weeks, at least two involved blinds that were supplied with safety kits.
- "I think the misconception is that if you have a retrofit kit or safety kit attached to the product that it is strangulation free, and that is simply not the case," Kaiser says [founder of Parents for Window Blind Safety].
- Incident also detailed: http://www.today.com/parents/moms-anguish-leads-renewed-warnings-window-blind-dangers-2D79449314

"Dangers of window-blind cords in spotlight after child's death" May 2014
http://www.ksl.com/?sid=29774094&nid=148&title=dangers-of-window-blind-cords-in-spotlight-after-childs-death&fm=home_page&s_cid=topstory
- Story focuses on a local area mother whose 18 month daughter also died after becoming strangled in window blind cords in 2006.
  - Incident happened at the child's daycare, but no details were given.

Feds Move to Protect Kids From Window Blind Cord Strangulation –October 2014
http://www.nbcnews.com/business/consumer/feds-move-protect-kids-window-blind-cord-strangulation-n222411
- CPSC's "five hidden hazards".
- CPSC starting the rulemaking process to either change the voluntary standard or a comprehensive federal standard.
  - Commission's action in response to petitions by seven consumer groups
- Window Covering Manufacturers Association (WCMA) counters that changing the standard would be expensive, remove safe products from the shelves and cost thousands of jobs.
  - "This would create a less safe environment because the CPSC's own data show that more than 80 percent of incidents occur with older products that don't meet current

standards or where the consumer did not install or use the product properly," [Ralph] Vasami [executive director of WCMA].

- One victim, aged 2, from Bethesda, MD, died after becoming entangled in the cords inside the Roman shades (perhaps when he was trying to look out the window). The outside cord was attached to a hook on the ceiling, out of reach (see same case above).
    - o Mother found the boy in his room when she went to wake him up in the morning.
- Another victim, aged 2, from Hixon, Tennessee, died after being left alone by his mother for less than two minutes to get her son a snack.
    - o He strangled on the cord in his room. The window blind met voluntary standards and had a breakaway mechanism but it didn't work.

Safety Commission Proposes New Guidelines For Window Blinds to Prevent Deaths –November 2014
http://www.nbcwashington.com/news/local/Blind-Cord-Window-Safety-282975621.html

- Article mentions a 2 year old boy who got caught in the window blind cords and is now quadriplegic and blind as a result.
    - o Boy was playing with his older brother (their mom was out of the room doing the dishes) when he became entangled.
    - o Mother stated that she was probably gone for two minutes. When she came back into the room, she cut her son down and preformed CPR.
- The article actually states that the boy was 10 years old, but this is most likely an error –the video that accompanied the story stated that the boy was 2 at the time of the accident.

Window Blind Cords: The Hazard in Plain Sight -2014
http://www.parents.com/health/window-blind-cord-safety/

- 23 month year old was caught in a window blind cord while his mother was out of the room.
- The mother did not know that the window covering cords and loops posed a potential issue.
- The window blinds came with a safety kit. This consisted of safety tassels, but the cord became tangled and reformed a loop, which is what the boy strangled in.
- The author notes that inner cord stoppers are not compatible with all blinds and tension devices and wall cleats can break with relative ease.

Toddler died after hanging himself on cord of window blind (UK) –September 2015
http://www.itv.com/news/meridian/2015-09-16/toddler-died-after-hanging-himself-on-cord-of-window-blind/

- 13 month old boy strangled on cord in parents' bedroom (the article later states that the boy slept in his parents' bedroom).
- The family's window blinds did not meet new UK regulations (imposed February of last year). that blind cords must be either fixed to the wall or have a snap-mechanism when 45kg is applied.
- Mother and siblings were downstairs watching television. His father had just returned home (at around 9pm) and went to his bedroom to put his coat away when he found the toddler unconscious.
- Performed CPR and called an ambulance, but the toddler never regained consciousness.

BlindSaver.com Helps Spread Awareness for Window Cord Safety Month – September 2015
http://finance.yahoo.com/news/blindsaver-com-helps-spread-awareness-100000406.html

- BlindSaver is donating 1 percent of cordless window blind sales during October to PFWBS' "Go Cordless Educational Program." This campaign funds educational posters in hospitals, daycares,

doctors' offices and other locations where parents and relatives of young children are likely to see them. This donation will also help PFWBS create educational videos to further spread this important message.

- "This is an important cause that often gets overlooked and BlindSaver wants to do its part to spread awareness and promote safety," Tim Baker, president of BlindSaver, offered. "During October, we will be offering free cordless upgrades on most products to help our customers purchase this important safety option. In addition, BlindSaver Basics line of cellular shades are cordless free of charge year round."

Safety doesn't take a holiday –September 2015
http://www.dailyexaminer.com.au/news/safety-doesnt-take-a-holiday/2779013/

- NSW Fair Trading Commissioner Rod Stowe said that whilst families may be aware of safety risks at home, staying in different locations such as holiday homes, or visiting with relatives, can mean different dangers.
- "Blind cords are a particular issue that families with babies and young children should be aware of," Mr Stowe said.

Ikea removes window blinds hazardous to kids – October 2015
http://abcnews.go.com/Business/ikea-removes-window-blinds-hazardous-kids/story?id=34170846

- Ikea's US stores will no longer stock corded window blinds.
- Transition to cordless or inaccessible cords will be phased out by January 2016 at Ikea's global locations.
- Last year, Target made a similar announcement to phase out corded window blinds.
- "This is a bold step by IKEA and Target," CPSC Chairman Elliot Kaye told ABC News. "This is the exact kind of leadership and corporate responsibility that has been needed to end the decades of senseless and preventable deaths of children from window cord strangulations."

Boston lagging well behind in goal for inspection of apartments –October 2015
https://www.bostonglobe.com/metro/2015/10/06/boston-lagging-well-behind-goal-for-inspection-apartments/wfTvV1gPq6pxhH28uokDiO/story.html

- Inspection program was designed to address poor conditions in rental units.
- Despite an initial goal of 60,000 units inspected by the end of the calendar year, only 9,000 apartments have been inspected so far.
- Process is time intensive and relies on landlords to register their units.
- Note – although the article does not specifically mention window blind cords (or if such cords are allowed by the city of Boston) residents with infants/toddlers may assume that if other seemingly innocuous conditions are prohibited (such as a defective bathroom sink stopper mentioned in the article) that window blind cords may also be regulated.

Window blinds safety tips for kids –Blinds Chalet
https://www.blindschalet.com/kba-window-blinds-safety-tips-for-kids-236.html

- Gives resources in the form of links (a lot of the links on the site do not work)
    - Window Covering Safety Council: http://www.fpl.fs.fed.us/documnts/informationalkits/infokit_0017_WindowCordSafety.pdf

- o CPSC safety alert: https://www.cpsc.gov/Global/Safety%20Education/Furniture%20Furnishings%20Decorations/5009aWindowCoveringsSafetyAlert6.pdf
- o Good Housekeeping blog detailing Ikea window blind recall: http://www.goodhousekeeping.com/institute/a21881/window-coverings-safety-advice/
- o How to keep pets safe from window blinds: http://www.aspca.org/adopt/adoption-tips/preparing-your-home-your-new-pet http://www.humanesociety.org/animals/cats/tips/cat_proofing_your_house.html http://www.meowfoundation.com/wp-content/uploads/2013/03/Cat-Health-and-Safety.pdf
- o University of Rochester Health Encyclopedia https://www.urmc.rochester.edu/encyclopedia/content.aspx?ContentTypeID=1&ContentID=4103
- o Tips to prevent strangulations in general (i.e. plastic bags) from University of Texas: http://www.utmb.edu/pedi/Keeping_Kids_Healthy/Strangulations.asp
- o Article about Blinds Xpress custom vertical blind recall: https://www.ncconsumer.org/news-articles/death-of-child-prompts-recall-of-window-blinds-by-blind-xpress.html
- o Consumer Alert from Michigan Attorney General (includes tips on how to prevent strangulations) http://michigan.gov/ag/0,4534,7-164-17337_20942-227998--,00.html
- o http://www.kcbd.com/story/24759250/safety-advocate-encourages-parents-to-avoid-dangerous-window-cords
- o Article about 3 year old girl who strangled in window blind cords (details not given): http://www.kcbd.com/story/24759250/safety-advocate-encourages-parents-to-avoid-dangerous-window-cords
- o Brief Press release from Fairfax County about the dangers of window covering cords and loops, offering general precautions: http://www.fairfaxcounty.gov/fr/news/2012archive/2012_19.htm
- o Kansas Department of Health and Environment press release about the dangers of windows in general (installing window guards, window stops, cordless blinds), especially advocating close supervision: http://www.kdheks.gov/news/web_archives/2009/04132009.htm
- o General guide to child safety: http://www.lumc.edu/depts/emsc/preventbk.pdf http://ncsu.edu/ffci/publications/1997/v2-n1-1997-winter/protecting.php
- o Consumer Product Safety Alert from CPSC about blind recall and how to install repair kits: http://www.nchh.org/Portals/0/Contents/CPSC_Window_Covering_Cords.pdf
- o Article about 6 year old girl from Suitland, MD who died after being caught in window blind cords (no further details given) http://www.nbcwashington.com/news/local/Girl-6-Dies-after-Entangled-in-Window-Cords-244546761.html
- o Tips to prevent strangulation in general from Kids Health: http://kidshealth.org/PageManager.jsp?dn=KidsHealth&lic=1&ps=107&cat_id=150&article_set=45136

Window Treatment Stores in the US Industry Market Research: Demand for window treatment stores is on the decline, as consumers increasingly consult general home improvement and decorations stores for their window needs on the basis of price and convenience.
http://www.prweb.com/releases/2015/03/prweb12566815.htm

Safe Kids Worldwide joins with its allies in the child safety community in favor of a mandatory rule that would reduce the risks associated with the cords that control window coverings
http://www.safekids.org/sites/default/files/documents/publicpolicylibrary/window_covering_comment_final.pdf

Includes references such as:

- Curiosity in Children Can Lead to Dangerous Situations," McLeod Regional Health Center, available http://www.mcleodhealth.org/latest-news/mrmc/curiosity-in-children-can-lead-to-dangerous-situations.html, accessed February 17, 2015.
- "Childhood Student Emergencies, Childproofing Your Home," American College of Emergency Physicians, available. http://www.emergencycareforyou.org/YourHealth/ChildhoodStudentEmergencies/Default.aspx?id=26126 accessed February 17, 2015
- "Preventing Childhood Injuries," National Center for Injury Prevention and Control, CDC, available http://www.hhs.gov/asl/testify/2008/05/t20080501e.html, accessed February 17, 2015.

Appendix B: Product Profile Report

<u>Introduction</u>

The project "Effectiveness of Safety Devices in Reducing the Risk of Child's Access to Hazardous Cords and Loops" has the objective to "identify the factors that impact the installation, use, and maintenance of the safety devices and analyze how these factors affect the likelihood of customers correctly installing, using, and maintaining the safety devices with the goal of reducing the risk of a child's access to hazardous cords and loops."

As first steps in addressing these issues, Westat has developed two companion summary documents. This document, the "Product Profile Report", provides a structured summary of the range of common product types, their features, and related information. The other document, "Review of Source Materials", summarizes available information on window cord incidents, injury scenario features, relevant standards, available consumer information, and associated information. Together, these documents provided a basis for subsequent analyses and helped to plan the consumer focus groups.

Two key sources of information were used for this "Product Profile Report": store visits and company websites. The store visits provided information on point-of-purchase considerations as well as direct observation of products. The websites provided information on product features, options, costs, installation, and safety-related information. The report begins with a summary of findings from the store visits. Five business establishments in the Rockville, MD, area were visited by the project team: two home improvement stores (Home Depot, Lowes), one department store (Kmart), one window covering specialty store (Next Day Blinds), and one store specializing in products for infants and children (Buy Buy Baby). Findings from the store visits are described in the next section of this document.

Following the store visit section, findings from the company websites are provided. Seven large retailer websites were visited, encompassing a wide range of window covering products. The review included general safety information available at the website, in addition to product-specific information. A sample product inventory was also compiled and submitted as a separate document to the CPSC. The product inventory was organized by window covering product type (e.g., corded horizontal blinds) and provides information on the physical features of each specific product, the cord, safety devices, safety information, installation requirements, cost, and links. A summary of the product inventory is presented at the end of Appendix B.

Summary of Store Visits

HOME DEPOT – Shady Grove Rd Rockville, MD - October 8, 2015

Window coverings displays and products

- Aisle and special order table section for shades and blinds.
- Different window coverings available, many horizontal blinds.
- Contact name and number for "window treatment expert" – if you want assistance.
- Many cordless options available, in particular for special order.
- Many window coverings with cords sold in boxes, no reference to cleats or other safety devices (breakaway).

Safety messages and equipment

- No safety messaging/ sign anywhere in the store in the area of the window blinds/ shades.
- Window cord cleats are not available in the window coverings section.
- Some displays included reference to safe options for window coverings.

- Displays included "unsafe" window coverings- tensioners that were loose, cords without cleats, etc. (See Figure 1).
- Window covering boxes did not have ANSI hazard messages.
- Baby safety section located in a separate area, did not include window safety devices.

Additional Notes

- Salesperson unfamiliar with location of cleats, needed to search throughout the store, found them in hardware section (See Figure 2).
- Salesperson offered alternative – plastic hooks – to use as cord cleats.

Figure 1: Display with beaded chain and loose tensioner

Figure 2: Cleats located in hardware department after search

LOWES – Kentlands, MD – October 14, 2015

Window coverings displays and products

- Aisle and special order table section for shades and blinds.
- Different window coverings available, many horizontal blinds.
- Many cordless options available, both in the boxed products and for special order.
- Many window coverings with cords sold in boxes.

Safety messages and equipment

- No safety messaging/ sign anywhere in the store in the area of the window blinds/ shades.
- Reference on signs for specific products and on some boxes to safety measures such as window blind cord stops and some breakaway devices, as well as choosing a cordless option.
- Window covering boxes all had clear ANSI hazard messages, different locations, different sizes of messages.

- Displays included "unsafe" window coverings- tensioners that were loose, cords without cleats, etc. (See Figure 3 and 4).
- Displays had ANSI hazard messages at the bottom of most display window coverings.
- Window cord cleats available in the window coverings section among different types of hardware, expensive ($3 for a single plastic cleat).
- Baby safety section located in a separate area, did not include window safety devices.

Additional Notes

- In some cases there seemed to be conflicting messages between the information about safety measures available for a particular window covering and hazard messaging- for example – "Child safe tassels and cord stops" advertised on the front and ANSI warning on the side about dangers of cords.

Figure 3 and 4: Displays with loose loops and knotted cords, Lowes

NEXT DAY BLINDS – Rockville Pike, Rockville MD – Neil, Rick, Lizzie, Sharon, October 14, 2015
Window coverings displays and products

- Store devoted to blinds and shades.
- All types of blinds and shades on display, including a variety of cordless products.

Safety messages and equipment

- Safety sign located on the door of the store (Hunter Douglas product).
- Dedicated brochure at entrance (Published by Next Day Blinds) with detailed information on different types of safety features and products available (see Figure 5).
- Salespeople knowledgeable about safety.

- Reference on signs for specific products and on some boxes to safety measures such as window blind cord stops and some breakaway devices, as well as choosing a cordless option.
- Cord cleat on display (see Figure 6), store indicated that the cleats arrive with the corded products and are installed unless request that they not be installed.
- Displays included "unsafe" window coverings- tensioners that were loose, cords without cleats, etc. (see Figure 7).
- Displays had ANSI hazard messages at the bottom of most display window coverings.
- Safety features on display include various breakaway devices, cord stops, cleats, cordless, ratchet cord options etc.

Figure 5: Brochure about Window Cord Safety at Entrance to Next Day Blinds

Figure 6: Cord Cleat included in display, Next Day Blinds

Figure 7: Loose chain cords on display, Next Day Blinds

KMART – Kentlands, MD – October 14, 2015

Window coverings displays and products

- Aisle for curtains and blinds.
- Very few window coverings available, all horizontal blinds.

Safety messages and equipment

- No safety messaging/ sign anywhere in the store in the area of the window blinds/ shades.
- Window cord cleats are not available in the window coverings section.
- Window covering boxes all had clear ANSI hazard messages, different locations, and different sizes of messages (see Figure 8).
- Baby safety section located in a separate area, did not include window safety devices.

Figure 8: Boxes with clear ANSI hazard messages, Kmart

BUY BUY BABY – Rockville Pike, Rockville MD –October 14, 2015

Window coverings displays and products

- Display of curtains and valances in furnishings section, no information about safety, however, did not include examples of shades or curtains with cords.

Safety messages and equipment

- One side of aisle devoted to baby safety, included one type of cord windup devices (Safety 1st).

Summary of Website Content

HOME DEPOT

http://www.homedepot.com/

Child Safety Page:

- Under Home → Home Décor, they have a section called "Child Safety for Blinds & Shades":
  http://www.homedepot.com/c/child_safety_for_blinds_and_shades_HT_BG_DC
    - Includes statistics about child deaths from window cord strangulation.
    - Includes a section to shop all cordless blinds and shades.
    - Includes a section on "Basic Window Treatment & Cord Childproofing Considerations".
        - Suggests that customers replace all window blinds and corded shades and draperies manufactured before 2001.
    - Includes a link for additional information on blinds and shades cord safety from CPSC:
      http://www.cpsc.gov//Global/Safety%20Education/Furniture%20Furnishings%20Decorations/5009aWindowCoveringsSafetyAlert6.pdf

Product Pages:

- In the product review, often mentions if it is a "certified child safe product" or it may say: "The CPSC approves this product as meeting child safety guidelines. CPSC strongly recommends the cordless lift option for homes with children and pets."
- There are usually warning images in the photos section of the product page.
- Information was generally easy to find on this page. Includes a lot of information compared to some of the other sites (Walmart, JCPenny, and Lowes).
- Always includes the type of cord, but the safety device information is usually buried in the installation guide.

Window Covering Instructions:

- Instructions differ based on the manufacture. Some of them have a "Safety" section, often with at least one warning image. However, some do not include any safety information or warning images.
- The safety device information is usually found in the installation guide.

Overall Notes:

- Offers a wide selection of corded and cordless blinds and shades.
- Every type of blind or shade we were looking for is available in corded and cordless.
- Home Depot has an installation service, or the customer can self-install the blinds or shades.

LOWES

http://www.lowes.com/en_us/home-t.html?s_tnt=362058:11:0

Child Safety Page:

Lowes does not have a page devoted to child safety and blinds/shades.

Recalls and Product Safety News Page:
- This page includes the following:
  > **"CPSC Warns of "Hidden Hazard" to Young Children - Old Window Coverings Pose Strangulation Risk" - 10/05.**
  >
  > The U.S. Consumer Product Safety Commission (CPSC), the Window Covering Safety Council, and independent retailers have joined forces to urge consumers to repair or replace window coverings purchased before 2001.
  >
  > Consumers possessing window coverings purchased before 2001 can obtain a free repair kit from the Window Covering Safety Council's Website at www.windowcoverings.org, or call (800) 504-4636. For more information, please click on the link":
  > **www.cpsc.gov/cpscpub/prerel/prhtml06/06014.html**

Product Pages:

- Some product pages include a warning about child safety and may include warning images in the pictures section. However, some product pages do not include any information or warning images about child safety.
- The specifications section usually includes the cord type and if it has a safety release device.
- Does not include information about safety devices, other than the safety release device.

Window Covering Instructions:

- Lowes does not include the installation instructions on the website.

Overall notes:

- Lowes did not have as much safety information compared to Home Depot and web-only sites, such as Blinds.com, Select Blinds, and Next Day Blinds.
- Sometimes it was hard to find a <u>corded</u> option.
- Offers a wide range of cordless blinds and shades. All of their vertical blinds and cellular shades are cordless.

WALMART

http://www.walmart.com/

Child Safety Page:

- Does not have a child safety page for window blinds and shades.

Product Page:

- No safety device information.
- Sometimes includes the cord type.
- No safety warnings or images.

Instructions:

- Does not include installation instructions.

Overall notes:

- Offers cordless and corded blinds and shades.
- Walmart and JCPenney contain the least amount of information compared to all the websites.

JCPENNEY

http://www.jcpenney.com/

Child Safety Page:

- Does not have a child safety page for window blinds and shades.

Product Page:

- No safety device information.
- No safety warnings or images.
- Sometimes it does not include the cord type.

Instructions:

- Does not include installation instructions.

Overall notes:

- Offers cordless and corded blinds and shades, but has a very small selection.
- Walmart and JCPenney contain the least amount of information compared to all the websites.

NEXT DAY BLINDS

http://www.nextdayblinds.com/

Child Safety Page:

- The homepage has a large icon in the top right corner of the page- very easy to find.

Store Locator   Child Safety   Awards   Careers   Contact Us | Cart   Login   CHILD SAFE

- "All products sold by Next Day Blinds are compliant with ANSI standards for child safety."
- The child safety page http://www.nextdayblinds.com/childsafety.asp includes a very helpful chart with the safety features for each product type.

	SAFETY FEATURES						
Product Type	Individual Tassels	Breakaway Equalizers	Single Cord below Separator	Looped Cord w/Anchor	No Cords	Motorized Option (No Cords)	Cord Shroud
Wood Blinds		X	X				
Premium Cordless Lift Wood Blinds *		X	X		X		
Cordless Faux Wood (only available with cord tilt)	X	X	X				
Wood Shutters					X		
Vinyl Shutters					X		
Honeycomb Shades		X	X			X	
Honeycomb Shades-Top Down/Bottom Up		X					
Cordless Honeycomb Shades					X		
Roller Shade Spring					X	X	
Roller Shade Clutch				X			
Natural Roman Shades	X					X	X
Fabric Roman Shades			X			X	X
Pleated Shades			X				
Savannah Shadings				X		X	
Mini Blinds		X	X				
Easy Lift Option				X			
Motorized Option Available (Cordless)					X		

- "The Consumer Product Safety Commission recommends cordless window coverings for environments with small children. In addition to the full line offering of products with standard lift systems, Next Day Blinds offers an array of cordless products and products with anchored lift systems.

- Includes the products that are cordless or have an anchored lift system (which eliminates free-hanging cords).
- Also includes a link to the Window Covering Safety Council (WCSC) to see if your window coverings are safe: http://windowcoverings.org.

Product Page:

- Next Day Blinds has the most organized safety section on the product pages.
- Every product has a description, care, measure, install, and child safety section.
- The child safety section includes a chart with all the possible safety features and which features apply to the product.

Safety Feature	Honeycomb Shades
Motorized Option (No Cords)	X
No Cords	X
Looped Cord (w/anchor)	X
Individual Tassels	
Breakaway Tassels	
Single Cord below Separator	X
Stop Rings	
Cord Shroud	

- It is always very clear if the customer can upgrade the cord type. The customer selects the lift system they would like, which would include the cordless option or other upgrades.

Instructions:

- Next Day Blinds can install the blinds or shades for the customer, of they can self-install them.
- Installation instructions are always included.
- These "Great Windows" instructions are the best out of all the manufacturers.
- The instructions are clear and easy to understand.
- The instructions always include a "Child Safety" section, which explains the safety features for that specific blind or shade.

Overall notes:

- This website observed to be the most organized for purchasing blinds and shades.
- Has an abundance of safety information that is always easy to find and very clear.
- Has a large selection of both corded and cordless blinds and shades.
- Note, did not see any use of the ANSI hazard images on the website.

SELECT BLINDS

http://www.selectblinds.com/

Child Safety Page:

- There is a "Safe Kids" page: http://www.selectblinds.com/safe-kids.html.
- Select Blinds is a sponsor for Safe Kids Day 2014 (does not seem to be updated).
- Includes safety video about how to make corded blinds and shades safe for kids.
- Free cord cleat program- complete a form and cord cleats will be shipped to your home for free.

- Cord cleats come with all corded blinds and shades, but this is not always clear on the product page or in the installation guide.

Product Page:

- It is clear if there is an option to upgrade to cordless or continuous cord lift.
- No child safety information on the product page.

Instructions:

- Rarely includes child safety information.
- Will include instruction about how to install certain safety features (such as the safety cord guide, for example), but does not include information about child safety or ANSI hazard images.

Overall notes:

- You can shop by "cordless" or "best for kids" (two different sections).
- Free cordless upgrade for nearly 110 blinds or shades.
- Note, did not see use of any of the ANSI hazard images on the website.

BLINDS.COM

http://www.blinds.com/

Child Safety Page:

- http://www.blinds.com/control/infopage?page=kidfriendly_blinds.html.
- Includes videos about child safety and 5 ways to make your windows safer for kids.
- Includes an infographic about how to determine the best blinds or shades for your family: http://www.blinds.com/infopages/images/childsafety/infographic-large.jpg.
- Includes a link to window coverings safety council: http://windowcoverings.org.

Product Page:

- Includes a section about upgrading to cordless, if available.
- Some products have an ANSI hazard image in the pictures section.

Instructions:

- Some instructions include the ANSI hazard warnings, but some do not.
- Most instructions do not have much safety information included.

Overall notes:

- Select Blinds, like Blinds.com, did not have as much safety information compared to Next Day Blinds.

Summary Table of Sample Product Inventory

	HORIZONTAL BLINDS	ROLLER SHADES	ROMAN SHADES	CELLULAR SHADES	VERTICAL BLINDS	TOTAL
NUMBER OF EXAMPLES IN SAMPLE	7	6	6	6	5	30
RETAILERS IN SAMPLE						
Home Depot	3	2	1	2	0	8
Lowes	1	0	2	0	0	3
Walmart	0	1	0	1	0	2
JCPenney	1	1	0	0	0	2
Next Day Blinds	2	0	1	1	2	6
Select Blinds	0	1	1	1	2	5
Blinds.com	0	1	1	1	1	4
CORD TYPES IN SAMPLE*						
Pull/lift cord	3	0	4	6	1	14
Pull/ lift cord and wand tilt	4	0	0	0	0	4
Continuous chain/cord loop	0	5	1	0	1	7
Cord and chain	0	0	0	0	3	3
Split cord	0	0	1	0	0	1
Unknown	0	1	0	0	0	1
SAFETY DEVICES IN SAMPLE**						
Breakaway device	5	0	0	1	0	6
Safety release device	0	0	2	0	0	2
Single cord below separator	2	0	1	1	0	4
Cord cleats	4	0	3	4	0	11
Cord cleats (upon request)	1	0	0	1	0	2
Safety washers/stops	2	0	0	1	0	3
Safety tensioner	0	5	1	0	5	11
Safety clip	0	1	0	0	0	1
Cord shroud	0	0	1	0	0	1
Unknown	1	1	0	1	0	3

*These are the standard cord types, not including any upgrade options.

**Each product may have more than one safety device.

Features Included in Sample Product Inventory

The following features are presented in the Sample Product Inventory Table. The information presented in the table is what is clearly visible on the websites that were accessed.

Product Name: Describes the product name, as stated on the website.

Category: Describes the product classification or type (i.e., horizontal blinds, roller shades, roman shades, cellular shades, or vertical blinds).

Cord Information:
- **Type of Cord:** Describes the product's cord (i.e., pull/lift cord, pull/lift cord and wand tilt, continuous chain or cord loop, cord and chain, or split cord).
- **Length of Cord:** When available, describes the length of the product's cord.
- **Cordless Option:** Describes any upgrades available to the cord type, as depicted on the product page of the website or in the store. This may be an entirely cordless option or a continuous cord loop, which some retailers consider to be a "cordless upgrade".

Safety Device: Includes any safety features for the product as described on the product page of the website, or in the instructions. Safety devices may include a breakaway device, safety release device, single cord below separator, cord cleats, safety washers/stops, safety tensioner, safety clip, or a cord shroud.

Safety Information:
- **Product Page**: Describes any safety information, including warning labels or symbols, clearly visible on the product page of the website.
- **Package:** Describes any safety information, including warning labels or symbols, clearly visible on the packaging of the product.
- **Product:** Describes any safety information, including warning labels or symbols, clearly visible on the product itself.
- **Instructions:** Describes any safety information, including warning labels or symbols, included in the installation instructions.

Installation Requirements: Describes the length of pages for the installation instructions, tools required, and the link to the instructions.

Web Source: Contains the source of information for the product. All information was gathered from a retailer, such as Home Depot, Lowes, Walmart, JCPenney, Next Day Blinds, Select Blinds, or Blinds.com.

Cost: Refers to the lowest price available for the product as advertised at the time of the review.

Link: Provides the product link.

Comments: Includes any additional information about the product or the website, including additional safety information.

Appendix C: Summary of Installation and Operation Experience

Summary of Window Coverings Hands-On Experience

The purpose of the evaluation process was to allow research team members to evaluate various window coverings and safety devices, in order to better understand potential mistakes and failures encountered by consumers that may lead to a hazardous situation.

Methodology

A detailed protocol was developed for the purpose of installation and hands-on testing of window coverings and aftermarket safety devices by research team members. Research team members had varying degrees of exposure and experience with these particular window coverings. This was to ensure that a wide range of observations, insights, and opinions regarding the window coverings was captured and would closely reflect those of a typical consumer. The protocol included the following key topics:

- Review of instructions;
- Evaluation of safety devices;
- Usability of the window covering;
- How children may interact with the product; and
- Possible failure modes.

The protocol also included subjective ratings of key issues for each of the window coverings. See Appendix C-1 for the protocol forms.

Each team member was assigned three to four window coverings for assessment and each window covering was evaluated by three to four members. In addition each member evaluated two to three aftermarket safety devices. This document summarizes key themes and findings reported in the protocol forms.

Key themes from Hands-On Experience

In the hands-on experience, several key themes emerged that relate to potential hazards for children from window coverings and cords. In general, these themes can be broken down into two categories: problems relating to incorrect installation and possible ways the coverings or safety device could fail while being used (either due to faulty construction or user error).

Factors leading to incorrect installation of safety devices:

- Safety device installation is listed as "optional" in instructions.
    - Consumers "might not want to do the extra [optional] step, especially after a lengthy installation".
- Safety devices described in instructions are not included with window coverings.
- Safety device (such as tensioners, cord stops) are not portrayed as important for child safety.
    - When reading the instructions for the Faux Wood Vertical Blinds, an evaluator noticed that the tensioner was called a "safety device." "The other [blinds] just said tension or cord guide."
- Instructions do not explain how to shorten window coverings/cords.
- Safety devices are not attractive, user may not want to install them.
- Cords cannot be shortened.

- For example, the Cellular shade operates a continuous loop, with no junction to allow it to be shortened and then put back together.
- Instructions do not detail how high/taught tensioner should be.
  - For most window coverings that had a continuous loop, a common observation was that the instructions provided "no information about where (how high) to install chain guide."

Possible failure modes leading to hazardous cord and loop access:
- Tensioners could break/rip out of the wall.
  - One evaluator noticed that for the Java Roller shade, the cord guide "seemed flimsy, and it can twist sideways even when screwed in which can make cord tension tighter and looser."
- Cleat was not used.
- Cleat not large enough to hold entire cord.
  - If the user did not take steps to shorten the cord, an evaluator noted that for the White Horizontal blinds, the "cord cleat is too small –definitely can fail to use it correctly."
- Inner cord stops not positioned high enough.

Subjective rating of window coverings
Evaluators rated window coverings on the following criteria, on a scale from 1-5, with 1 being the lowest score and 5 being the best score.
- Safety information provided on packaging;
- Initial impression of the safety of the product;
- Clarity of instructions for the product;
- Clarity of instructions for the safety devices for the product;
- Ease of installation for the safety device for the product; and
- Usability of the product.

Please note that the numbers assigned to each window covering represent their labels in the laboratory set up. Window covering #9 was a cordless version of a Roman Shade. Therefore it was not included in initial evaluation. Table 1 illustrates the composite score of the above criteria. Appendix C-2 has the breakdown of evaluators' ratings based on the above six criteria.

Table 1

Window covering	No.	Average Score
Faux Wood Vertical Blind	2	4.2
Java Roller	1	3.7
Blue Corded Roman Shade	10	3.6
Brown Faux Wood Horizontal Blind	8	3.4
Aluminum Horizontal Blind	7	3.1
Green Roller Shade	5	2.9
Bamboo Roman Shade	6	2.8
White Horizontal Blind	4	2.3
Cellular	3	2

Recommendation window coverings for use in focus group study

For the purpose of the focus groups, window coverings must be chosen that represent a wide range of user experiences. Window coverings that were both highly rated and lowly rated should be included to provide comparisons. In addition, a sample of each type of safety device should be included. Within the protocol assessments the research team members made recommendations of window coverings and aftermarket devices that should be included in the focus groups. Based on the ratings and narrative comments, the following window coverings are recommended for the focus group:

- Faux Wood Vertical Blind,
- Cellular shade,
- Green Roller Shade,
- Aluminum Horizontal Blind,
- Brown Faux Wood Horizontal Blind, and
- Blue Corded Roman Shade.

Suggested modifications to focus group set up

Based on evaluators' comments some modifications could be made to the laboratory set up for the purpose of the focus groups:

- Cords should be cut just long enough so that they are not dragging on the floor.
- Additional safety devices (like cleats or inner cord stops) could be supplied to some window coverings to see if users would think that they offer additional safety benefits.

Appendix C-1: Procedure and protocol for window covering & aftermarket device hands-on experiences

Window Coverings Procedure

1. Take a look at the window covering and note any warnings or safety features on the product. Please note that frequently window covering manufacturers have their own names for safety devices, which may be different from the list below.
   - o   Cord cleats
   - o   Tensioners
   - o   Breakaway devices
   - o   Inner cord stops

2. Instructions are attached to each window frame inside a folder. Take them out and review them. In particular, look for any warnings related to cords or instructions on how to install/use safety devices

3. For some window coverings you will be provided with a safety device to install (i.e. cord cleat). In these instances, there will be several holes already drilled in the window frame. Using the provided screws and screwdriver, install the device in the place you think would be best if you were in your own home.

4. Test out the window covering. Try all of the features (i.e. open and close it, rotate the slats).

5. Try out all of the safety features that you previously noted.
   a.   Wrap the cord around the cleat
   b.   Try out the cord tensioners
   c.   Move the inner cord stops and test them out to see how they work
   d.   Test the breakaway device

6. Fill out the first part of the evaluation sheet while testing each window covering. Once you have completed all assigned window coverings, go back and fill in the rest of the form.

Task Analysis Protocol – Testing out Window Coverings

Product Name/#: _____

Evaluator: _____ Start Time: _____ End Time: _____

Step	Task	Comments
1.	Cursory glance at product	
1a.	What types of warning labels are on the product? Where are they located?	
1b.	Any initial impressions related to safety of the product?	
2.	Review of Instructions (the instructions are attached to the window frame)	
2a.	Languages Available?	
2b.	Describe warnings included in instructions (e.g., written and / or diagrams; for one or more safety devices etc.)?	
2c.	In reviewing the instructions, how clear are the installation steps? What makes things clear or unclear?	
3.	Safety Devices (if installation is necessary the materials are attached to the window frame)	
3a.	Which types of safety devices are available?	
3b.	**If provided a safety device to install,** did you experience any difficulty installing the device? Would an "average consumer" be able to install the device correctly?	
3c.	How clear are the installation instructions for safety devices? What makes things clear or unclear?	
3d.	How clear is the description of the danger and injury prevention mechanism for safety devices? (i.e. why it is important to install the safety device correctly)	
3e.	Would a consumer consider not installing safety device? (e.g. optional, unclear instructions, difficult to install)	
3f.	Is there a way for the safety device to fail, even when used properly? Alternatively is there a way to "defeat" the device and use the window covering without the device?	

4	Assess product operation	
4a.	How easy or difficult is it to use the safety devices/ features of the product?	
4b.	Subjective assessment of maintenance requirements (e.g. over time would it be easy/ difficult to maintain, in particular safety features).	
4d.	What are possible errors a consumer might make when using the safety device?	
5.	Child interaction with the product: Provide some thoughts on the potential interactions a child might have with this product? (e.g. are there aspects that might be attractive to a child, might a child overcome the safety device, etc.)	
6.	Overall insights: Provide some thoughts on product and safety features, including ease of use, maintenance, or consumer concerns/priorities.	

Please wait until you have evaluated all assigned window coverings before completing this section:

Subjective Ratings (From 1 low to 5 high)	
Overall rate the safety information provided on packaging	1 2 3 4 5
Overall rate your initial impression of the safety of the product	1 2 3 4 5
Overall rate the clarity of instructions for this product	1 2 3 4 5
Overall rate the clarity of instructions for the safety devices for this product	1 2 3 4 5
Overall rate the ease of installation for the safety device for this product	1 2 3 4 5
Overall rate the usability of this product	1 2 3 4 5

For the purpose of a focus group do you have any recommendations on:

- Whether or not to include this window covering?
- Any changes for the set-up of this window covering?
- What features of this product should be tested / evaluated by participants? (check all that apply)

	Read Instructions		Raise / Lower Window covering
	Read Warning Labels		Use Cord Cleat
	Install Cord Cleat		Look at Packaging
	Install Tensioner		Evaluate usability in user's home
	Shift Cord Stops		Evaluate possible modifications to window covering Specify: shortening window covering height, cutting cords, moving cord stops, etc. _____
	Other, Specify:		Other, Specify:

Task Analysis Protocol – Testing out Aftermarket Devices

Product Name _____   Evaluator: _____

Procedure
1. Look at list of devices. Try to select devices for testing that were not installed by others
2. Review instructions.
3. Try to use the device on a corded window covering. If installation is too time-consuming, simply look and evaluate the device
4. Fill out evaluation form
5. Return aftermarket device to its folder once finished.
6. Check off which ever device you evaluated on the table in the lab

Step	Task	Comments
1.	Review of Instructions	
1a.	In reviewing the instructions, how clear are the installation steps? What makes things clear or unclear?	
2.	Usability	
2a.	How easy or difficult is it to use the safety device?	
2b.	Is there a way for the safety device to fail, even when used properly? Alternatively is there a way to "defeat" the device and use the window covering without the device?	
2c.	Would a consumer consider not installing safety device? (e.g. optional, unclear instructions, difficult to install)	
2d.	Subjective assessment of maintenance requirements (e.g. over time would it be easy/ difficult to maintain)	
3.	Overall insights: Provide thoughts and opinions on this aftermarket device	

For the purpose of a focus group do you have any recommendations on:

- Whether or not to include this device?
- How should this device be used in the focus group?

Appendix C-2: Summary of window covering & aftermarket device evaluations

Java Roller (1)

Review of instructions	• "Cord guide" is not described as a safety feature • Clear instructions –a lot of pictures, not too much text • Drill needed • Easy installation • Warning labels imply tensioner should be mounted high • Instructions do not mention safety concerns specific to this window covering
Safety device	• Relationship between the safety device and hazard is not clear • Tension device not attractive • Cord guide seems cheap/flimsy –could break with repeated use
Product operation	• Easy to use • Loop is long • Shade operates even when tensioner is not installed • Sometimes shade rolls up crooked
Child interaction with product	• Beaded chain looks like a necklace • May play/hang off continuous loop, climb on the chain
Overall insights	• Safety is not a selling point • Does not explain what to do if the cord breaks • Difficult to get tension just right
Failure modes	• Tensioner loop not installed taught • Tensioner breaks • Cord guide not seen as a safety device • Loop not shortened

Subjective Ratings (From 1 low to 5 high)	
Overall rate the safety information provided on packaging	3.5
Overall rate your initial impression of the safety of the product	3.5
Overall rate the clarity of instructions for this product	3.5
Overall rate the clarity of instructions for the safety devices for this product	3
Overall rate the ease of installation for the safety device for this product	4
Overall rate the usability of this product	4.5

✓✓	Read Instructions	✓✓	Raise / Lower Window covering
✓	Read Warning Labels		Use Cord Cleat
	Install Cord Cleat		Look at Packaging
✓✓	Install Tensioner	✓	Evaluate usability in user's home
	Shift Cord Stops	✓	Evaluate possible modifications to window covering Specify: shortening window covering height, cutting cords, moving cord stops, etc.(**shortening chain**)
	Other, Specify:		Other, Specify:

Faux Wood Vertical (2)

Review of instructions	• Easy to install, snaps into place • Drill needed • Cannot modify size of continuous loops • Includes separate child safety instructions detailing shortening techniques (not all relevant to this particular window covering • Strangulation/chocking warnings on cord • Description of scenarios/how to address them
Safety device	• Warranty dependent on installation of device • Explain what the devices do and why they are needed • Difficult to install two tensioners on one side of the window • Tensioners not attractive • One of few products that call the tensioner a "safety tensioner" • Screws may loosen when installed in drywall
Product operation	• Easy, but having two tensioners on one side makes it slightly difficult to use
Child interaction with product	• Beads could be mistaken for jewelry • Cords could be fun to play with • Blades could be easily torn off
Overall insights	• Seems generally safe. • Cords shorter than others • Install page on cord safety was useful • Errors are mostly regarding incorrect installation • Break-away cords would increase safety of window covering
Failure modes	• Tensioner breaks out of wall • The dual tensioner is perceived as a nuisance

Subjective Ratings (From 1 low to 5 high)	
Overall rate the safety information provided on packaging	5
Overall rate your initial impression of the safety of the product	4.5
Overall rate the clarity of instructions for this product	4.5
Overall rate the clarity of instructions for the safety devices for this product	3.5
Overall rate the ease of installation for the safety device for this product	3
Overall rate the usability of this product	4.5

✓✓	Read Instructions	✓	Raise / Lower Window covering
✓✓	Read Warning Labels		Use Cord Cleat
	Install Cord Cleat		Look at Packaging
✓✓	Install Tensioner	✓	Evaluate usability in user's home
	Shift Cord Stops		Evaluate possible modifications to window covering Specify: shortening window covering height, cutting cords, moving cord stops, etc. _____
	Other, Specify:		Other, Specify:

Cellular (3)

Review of instructions	• Warning labels attached to cord and on bottom slat \
	• Instructions describe tensioner which is not included (also not possible to use cleat on continuous loop)
	• Tensioner only mentioned briefly in main set of instructions
	• Drill needed
	• Instructions somewhat confusing –lots of details for optional steps
	• Illustrations clear
Safety device	• Tensioner has separate instruction manual –explains dangers window coverings pose to children if tensioner is not maintained
Product operation	• Cords very long
	• No way to shorten cords
	• Forced to use tensioner once installed
Child interaction with product	• Minimal, except if the tensioner is installed low, child could pull on it and pull it out of the wall
Overall insights	• Loose tensioner would be a hazard
	• Could simply not install tensioner
	• Cords could eventually fray
Failure modes	• Loop too long to be installed taught

Subjective Ratings (From 1 low to 5 high)	
Overall rate the safety information provided on packaging	2
Overall rate your initial impression of the safety of the product	2
Overall rate the clarity of instructions for this product	3
Overall rate the clarity of instructions for the safety devices for this product	2
Overall rate the ease of installation for the safety device for this product	1
Overall rate the usability of this product	2

✓✓	Read Instructions	✓✓	Raise / Lower Window covering
✓	Read Warning Labels		Use Cord Cleat
	Install Cord Cleat	✓	Look at Packaging
✓✓	Install Tensioner	✓✓	Evaluate usability in user's home
	Shift Cord Stops	✓	Evaluate possible modifications to window covering Specify: shortening window covering height, cutting cords, moving cord stops, etc. _____
	Other, Specify:		Other, Specify:

White Faux Wood Horizontal (4)

Review of instructions	• Installation of inner cord stops are listed as "optional" • Product comes with cord cleat, the step is listed as "optional" and mixed in with another step • Warning about dangers of inner cord and mentions how inner cord stops can reduce it, but in this section there are no instructions on how to install the inner cord stops • Instructions do not address how to cut excess cord
Safety device	• Instructions do not say that cord cleats are a safety device • Cleat is too small to hold all of the excess cord
Product operation	• Very long cords –when wrapped around the cleat, there is extra cord • VERY heavy –difficult to operate • Cleat is time consuming to use
Child interaction with product	• Tassels could be attractive to a child • Long cord could form a noose
Overall insights	• Advertises "child safe tassels and cord stops". However, these devices do not completely mitigate strangulation risk • Warnings were not specific, did not link risk to safety features, difficult to understand the purpose of the cord stops
Failure modes	• User does not use cleat • Cleat becomes undone • User does not read "optional" instruction steps

Subjective Ratings (From 1 low to 5 high)	
Overall rate the safety information provided on packaging	1.5
Overall rate your initial impression of the safety of the product	2
Overall rate the clarity of instructions for this product	2
Overall rate the clarity of instructions for the safety devices for this product	2.5
Overall rate the ease of installation for the safety device for this product	3
Overall rate the usability of this product	2.5

✓✓	Read Instructions	✓✓	Raise / Lower Window covering
✓	Read Warning Labels	✓	Use Cord Cleat
	Install Cord Cleat		Look at Packaging
	Install Tensioner		Evaluate usability in user's home
✓✓	Shift Cord Stops	✓✓	Evaluate possible modifications to window covering Specify: shortening window covering height, **cutting cords**, moving cord stops, etc. _____
	Other, Specify:		Other, Specify:

Green Roller (5)

Review of instructions	• Instructions have no mention of cord safety • No warning labels or anything in instructions • Instructions for installation are quite clear
Safety device	• Getting the cord guide taught enough so that there is no slack may be somewhat difficult for some people • Once tensioner is installed, must use it • Tensioner feels cheap –could either break or break off of the wall • While loop could be shortened , the instructions do not detail this
Product operation	• Easy to use once installed
Child interaction with product	• Loop looks like a beaded necklace • Child may tug on the loop and loosen the tension device
Overall insights	• While the instructions state that the window covering will not work properly without the cord guide installed, that is not true • Instructions need more hazard descriptions • Instructions offer a good "bad" example
Failure modes	• Tensioner could break or break off wall • Tensioner not installed could leave hazardous loop

Subjective Ratings (From 1 low to 5 high)	
Overall rate the safety information provided on packaging	Not rated
Overall rate your initial impression of the safety of the product	2
Overall rate the clarity of instructions for this product	4.5
Overall rate the clarity of instructions for the safety devices for this product	1
Overall rate the ease of installation for the safety device for this product	2.5
Overall rate the usability of this product	4.5

✓✓	Read Instructions	✓✓	Raise / Lower Window covering
	Read Warning Labels		Use Cord Cleat
✓	Install Cord Cleat		Look at Packaging
✓✓	Install Tensioner	✓	Evaluate usability in user's home
	Shift Cord Stops	✓	Evaluate possible modifications to window covering Specify: shortening window covering height, cutting cords, moving cord stops, etc. _____
	Other, Specify:		Other, Specify:

Bamboo Roman (6)

Review of instructions	• Strangle warning on inner cord with warning pictures • Devices linked to strangulation warning • Very clear instructions with pictures • No instructions for the cleat • Clear instructions for the inner cord stops
Safety device	• Inner cord stops come already attached to the cord
Product operation	• Cannot modify size of the shade • Cords are too long
Child interaction with product	• Long cords could be fun to play with, tied in a loop
Overall insights	• While the stops are helpful, the cord is still too long • Need better description of the lift cord hazard • Would be good to ask participants how they would shorten the cords
Failure modes	• User does not cut cords • Safety devices (inner cord stops, cleat) not installed correctly

Subjective Ratings (From 1 low to 5 high)	
Overall rate the safety information provided on packaging	3
Overall rate your initial impression of the safety of the product	2
Overall rate the clarity of instructions for this product	3.5
Overall rate the clarity of instructions for the safety devices for this product	1.5
Overall rate the ease of installation for the safety device for this product	4
Overall rate the usability of this product	3

✓	Read Instructions	✓✓	Raise / Lower Window covering
✓✓	Read Warning Labels	✓✓	Use Cord Cleat
✓✓	Install Cord Cleat	✓	Look at Packaging
	Install Tensioner	✓	Evaluate usability in user's home
✓✓	Shift Cord Stops	✓✓	Evaluate possible modifications to window covering Specify: shortening window covering height, cutting cords, moving cord stops, etc. _____
	Other, Specify:		Other, Specify:

Aluminum Horizontal (7)

Review of instructions	• In instructions, warning that inner cords are dangerous, clearly states that inner cord stops help with this, yet no illustration/graphic of the danger • Instructions fairly clear • Warning label on cord and bottom slat • Drill/screwdriver needed • Good description on how to shorten window coverings, but no explanation on why shortening window coverings may be good for safety reasons
Safety device	• Safety device (cord stop) is not a required step. May not know what they are if user did not read warning labels
Product operation	• Very easy to raise/lower window covering • Inexpensive, the type of product a rental would have • Blades are flimsy (can get twisted)
Child interaction with product	• Flimsy blades could get tangled if a child plays with them • Flexible nature of horizontal slats make them fun to play with, make a novel noise when "strummed"
Overall insights	• Free hanging cords present a safety problem, including a cleat may mitigate this risk • Inexpensive product is probably representative of what a lot of people own
Failure modes	• User does not install cord stops • Cords not cut

Subjective Ratings (From 1 low to 5 high)	
Overall rate the safety information provided on packaging	2.5
Overall rate your initial impression of the safety of the product	3
Overall rate the clarity of instructions for this product	3.5
Overall rate the clarity of instructions for the safety devices for this product	3
Overall rate the ease of installation for the safety device for this product	3
Overall rate the usability of this product	3.5

✓✓	Read Instructions	✓✓	Raise / Lower Window covering
✓✓	Read Warning Labels		Use Cord Cleat
	Install Cord Cleat		Look at Packaging
	Install Tensioner	✓	Evaluate usability in user's home
✓✓	Shift Cord Stops	✓✓	Evaluate possible modifications to window covering Specify: **shortening window covering height**, cutting cords, moving cord stops, etc. **ADD CLEAT**
	Other, Specify:		Other, Specify:

Brown Faux Wood Horizontal (8)

Review of instructions	• Warning label on bottom rail and cord, warns that children can move furniture to reach window covering • Instructions describe and depict cord stops, cleats and consolidator (breakaway device). However, cleats are not included with the product • No optimal height is given for the cleat and steps that describe the safety device are listed as optional • Instructions are somewhat confusing/inconsistent -good diagrams but lacking in detail • Does not do into detail on how to trim lift cord • Section in instructions on cord safety
Safety device	• Consolidator works well and is easy to use. User would not need to install the consolidator, it comes attached • The single cord below the consolidator is long enough for a child to wrap around their neck
Product operation	• The single cord operation works just as well as the other window coverings
Child interaction with product	• Long lift cord would be a problem. A child could possibly reach the cord
Overall insights	• Need better info on how to evaluate hazard. • How can we tell if a cord is too long? • Since the cleat and cord stops were not provided, a user may assume that they are not important for safety • Possible for cord stops to break • Good that the breakaway device is already installed –user has no choice
Failure modes	• Single cord below consolidator not shortened

Subjective Ratings (From 1 low to 5 high)	
Overall rate the safety information provided on packaging	3
Overall rate your initial impression of the safety of the product	4
Overall rate the clarity of instructions for this product	4
Overall rate the clarity of instructions for the safety devices for this product	3.5
Overall rate the ease of installation for the safety device for this product	2
Overall rate the usability of this product	4

✓	Read Instructions	✓✓	Raise / Lower Window covering
✓✓	Read Warning Labels	✓✓	Use Cord Cleat
✓	Install Cord Cleat		Look at Packaging
	Install Tensioner	✓	Evaluate usability in user's home
✓✓	Shift Cord Stops	✓✓	Evaluate possible modifications to window covering Specify: shortening window covering height, cutting cords, moving cord stops, etc. _____
	Other, Specify:		Other, Specify:

Corded Roman (9)

Review of instructions	• Strangle warning on card attached to the back cords • Dangers are well documented, but not permanent (user would remove tags once installed) • Instructions mention that a cord cleat should be installed –risk not reiterated in this section • Instructions detail that cord cleat should be installed high enough to be out of the reach of children and that cleat should be used whenever shade is raised
Safety device	• Cleat is easy to use, but the reason for the safety device is not obvious. Simply a warning with a crossed-out picture of a child playing with a cord • Cleat is not attractive • Amy: install in #2 • Jim: install in #1
Product operation	• Easy to use • Placement of cord is awkward –to lock it, you must reach the cord behind the shade
Child interaction with product	• Child might use the stick that is in the bottom of the window coverings as a wand or striking object • Child may try to hide behind the window covering, play hide and seek
Overall insights	• No safety issues discussed in the instructions AT ALL. Safety was only addressed on the product itself • Knots in the back cords supposed to prevent cords from pulling out? • Seems less safe than the cordless version
Failure modes	• Inner cord stops not properly installed • Cleat not used

Subjective Ratings (From 1 low to 5 high)	
Overall rate the safety information provided on packaging	4.5
Overall rate your initial impression of the safety of the product	3.5
Overall rate the clarity of instructions for this product	3
Overall rate the clarity of instructions for the safety devices for this product	2.5
Overall rate the ease of installation for the safety device for this product	5
Overall rate the usability of this product	3

✓✓	Read Instructions	✓✓	Raise / Lower Window covering
✓✓	Read Warning Labels	✓✓	Use Cord Cleat
✓✓	Install Cord Cleat	✓	Look at Packaging
	Install Tensioner		Evaluate usability in user's home
	Shift Cord Stops		Evaluate possible modifications to window covering Specify: shortening window covering height, cutting cords, moving cord stops, etc. _____
	Other, Specify:		Other, Specify:

Universal Cord Tensioner

Review of instructions	• No instructions on how to attach tensioner to cord • No details on how to attach cord glide into the cord tensioner • Clear how to install tensioner into the wall
Usability	• Easy to use once installed
Overall insights	• If plastic glide is not installed correctly, could wear and tear on the cord, causing it to break
Suggestions for focus group	• Participants should install the tensioner themselves

Blind Winder Cord Retractor

Review of instructions	• Clear instructions with a good combination of diagrams and text • Installation slightly difficult
Usability	• Easy to use once installed • Retractor can only hold so much cord, but if user shortened their cord this would not be a problem • Device seems durable • If knots release, may become inoperable
Overall insights	• Device is heavy, would predict that most people would remember to use it (they would not want a lot of tension hanging on their cords • Instructions clear on the safety benefit of the device
Suggestions for focus group	• Would be good to include since it requires much less maintenance than other devices • Have a separate "station" with just cords attached. Have participants try devices there

Blind Cord Wind-ups

Review of instructions	• Clear instructions with a good combination of diagrams and text
Usability	• A little confusing at first as to where on the cord one should start winding, but once this becomes clear, the device is easy to use • If the cords hanging below are pulled on, sometimes the device pops off. This could be a problem if a child could reach the very end of the cord
Overall insights	• Device is not attractive • Time consuming to wind up by hand each time • Seems cheap –could break or tangle cords after a while • Simple solution
Suggestions for focus group	• Installation would be quick

Safety Wrap

Review of instructions	• Simple and straightforward • No tools needed
Usability	• Acts as a cord cleat • Adhesive may fail or plastic could break
Overall insights	• Very simple to install, consumer may find it more attractive than the standard cord cleat
Suggestions for focus group	• Could present as an alternative to a cord cleat • Have wrap pre-installed, adhesive would weaken after multiple focus groups

Cord Clip (Suction cup)

Review of instructions	• Fairly clear instructions • Instructions specify length of cord needed to wrap around the device which was confusing
Usability	• Easy to use • Double cords can sometimes get tangled –must take your time while spooling the cord or they may come off • Instructions do not explain how to take it off window
Overall insights	• Bulky and not attractive
Suggestions for focus group	• Could not demonstrate for a focus group (no windows) • Device could be passed around to get participants' thoughts on it • Good to include with renters

Cord Winder

Review of instructions	• Succinct and very visual • Simple instructions
Usability	• Easy to use • Minimal maintenance expected
Overall insights	• No real hazard description, but sold for safety or aesthetics • Simple, cheap and intuitive
Suggestions for focus group	• Have participants install on cords

Appendix D: Focus Group Moderator Guide

6383.01 Focus Group on Window Coverings and the Use of Window Covering Safety Devices
Moderator Guide

1. **Review Purpose, Objective, and Scope of the Focus Group**

Introductions and rules

The purpose of this focus group is to:
- **Learn** more about **how people decide** which window shades and blinds to **buy**
- And how they **use them**.
- We are also trying to **understand the effectiveness** of various **features and devices** that are made for these products.

No special knowledge or ability is required to participate.

You have been **selected to participate** in this focus group because you indicated that **you have window shades and/or blinds** in your home.

During this focus group, you will have an **opportunity to try out several different window shade and blind** configurations and related devices and share your opinions with us.

How many of you have taken part in a focus group?

Before we begin our discussion, I would just like to review some basic focus group rules and guidelines.

    a. Focus groups have certain rules and etiquette that we follow
        i. No one will be judging your responses
        ii. We need to hear about <u>your</u> feelings and opinions, not ours. We are not here to reach consensus, but to hear and discuss a range of views. There are no "right" or "wrong" answers.
        iii. We want to encourage discussion among group members, not to/from the moderator; the moderator will merely guide the discussion to cover the topics we need to hear about.
        iv. We want to give everyone the opportunity to speak – it is important to hear from everyone.
        v. The session is being video and audio recorded for analysis later; participation is voluntary.
        vi. Rest rooms are down the hall, and breaks are available and planned.

b. Please be completely honest during this discussion. Your responses will NOT be shared with anyone other than people working on the project. Your name and any other identifying information will not be used in any reports that we prepare about the focus group.
c. Please respect the privacy of the other people in this group by not discussing what is said here with anyone outside the group or in public.
d. Our objective is to gain insight about how people use and feel about various types of window coverings and safety systems designed for them. During the session, I will guide us along various topics; but **YOU** are the **experts** and will be doing most of the talking.

2. Initial Discussion

Introductions

A. Participant Experience with Window Coverings

- What type(s) of blinds and/or shades are in your home? ==*Show images of different types.*==
  - What **other type(s) of window coverings** do you have, such as drapes or curtains?

- Did your home **come furnished** with these?

  - For those who said their home came furnished with window coverings:
    - Have you ever considered replacing the window coverings and blinds?
    - How old do you estimate the different blinds and shades in your home to be?

  - **For Renters: Does your rental agreement allow you to purchase and install different window coverings?**

- Which **rooms/locations** have window coverings?

  - in **How many windows** your home have **window coverings** currently installed?
  - Do any of the windows have window **ledges or a space where you could climb or stand?**

- What **furniture (or equipment or toys)** do you have positioned near the windows in your home?
  - How close is the furniture (or equipment or toys) to the window?

B. Purchasing and Installing

- Have you ever **purchased** window coverings? This includes blinds, shades, drapes, and curtains.

- What **stores or online websites** did you use (or would you use) to shop for window coverings?

- What **factors** did you consider (or would you consider) when purchasing?

- o Cost
- o Time and effort to install
- o Appearance
- o Safety
- o Availability
- o Product reviews

- **IF SAFETY WAS A FACTOR:**

  - What do you **mean by safety**?
    - What is a safe blind?

  - **Where** would you **look for safety information** pertaining to the window shade or blind?
    - On the window covering package
    - Safety websites
    - Store websites.

  - When purchasing the blinds, did **anyone ever speak to you about safety**?

  - Do you **recall seeing safety information** when you purchased window blinds?

- **DID YOU INSTALL THE NEW WINDOW COVERINGS YOURSELF?**

  - o Tell us about the installation of your window coverings
    - How long did it take? Do you recall:
      - Any difficulties,
      - Frustrations, or
      - Problems with the installation?

  - o Did you **use any written instructions** to install the window coverings?

    - **If participant used instructions**, ask:
      - How **clear or unclear** were the instructions?
      - Do you recall if the instructions **included safety information**?

  - o Were there **warning labels** on the box or the coverings themselves?

    - If participant says yes, ask: Are the warning labels still attached to the window coverings or did you remove them?

  - o Did you **install all provided parts and features**, such as cord cleats, tensioners, or other accessories?

- If not all parts were installed, probe:
  - If not, why?
  - Attractiveness?
  - Difficult to install?
  - Didn't want to damage wall?
  - Weren't necessary for function?

- o Did you make **any modifications during installation?**
  - shortening the cords,
  - shortening the blind,
  - altering cord stops etc?

C. <u>Use and Maintenance</u>

- Do you **adjust your window coverings daily**, or do you leave them at a preset height/orientation/position?

  - o Do you ever have **any problems when you are trying to adjust** your window blinds or shades?
    - cord is stuck or jammed,
    - the window covering does not stay at the desired height?

- Have you ever had a shade or blind or **any part of it break or come loose**?
  - o If so, what happened?
  - o How did you fix it (did you fix it)?

- **IF PARTICIPANT INSTALLED ACCESSORIES**, (cord cleats and tensioners)
  :
  - o Do you ever have **any issues when working with a**ccessories (cord cleats, tensioners?
    - What **type of issues** do you have?
    - Did you **fix the broken accessory** (why or why not)?

  - o Did you make **changes to location of devices** over time – for example move the cordstops, move the cleat etc.

  - o For those who have cord cleats, ask: Do you ever **find yourself not using it or forgetting to use it**? Why do you think this happens?

D. <u>Perception of Hazards Associated with Window Coverings/Understanding of Risks</u>

- What **safety risks do you see with window shades and blinds**?
  - o Where did you **learn about the safety risks** associated with window shades and blinds?

- **Who might be at-risk** (children, pets)? Why?

- Have you **heard any stories** about someone being **injured** by a window shade/blind or cords?

- Do the window shades and blinds at your home **have warnings or safety labels**?
  - Did you **read** the safety label?
  - What **types of information** are included on the label?

- Are you **aware that safety devices exist** for different window blind and shade types?
  - What **types of window covering safety devices** have you heard of?
  - What were some of your reasons why you might install a safety device?

Provide a description of the different safety featuress / aftermarket devices, and show examples of them in use. Ask participants to respond (on paper) to two questions for each device presented.

Question 1: Have you ever seen this item before today?
Question 2: Have you ever used this item in your home? There is also space for the participant to write any notes or general impression of the device, for example how effective it might be.

1) Blind Winder   (2) Cord Cleat (3) Cord Clip (4) Cord Wrap

- Have you **purchased a safety device** for your window coverings?
  - If so, **what type**?
  - **Where** did you purchase the safety device?
  - **How did you know** what to buy?

- **FOR RENTERS: Did your rental come with a safety device pre-installed?**

- Have **you ever installed a safety device** for a window covering, if so, what kind(s)?
  - How do you feel the installation process went?
    - Did you use the instruction manual?
    - Was the **instruction manual easy or difficult** to use?

- How willing would you be **to purchase a safety device** for your window covering?

  - What **factors** would **influence your decision** to purchase a safety device?
    - Cost
    - Install requirements
    - Possible damage to wall,
    - Convenience,
    - Aesthetics
    - Need for safety device?

  - Where would you **look for information** on window covering **safety devices**?

o How would you decide **which device to install**?

- What are some of the **reasons** you may **not install a safety device**?
    - o Cost too much,
    - o installation was onerous,
    - o unaware safety devices existed,
    - o kids are always supervised,
    - o cords are high up,
    - o no visible cords,
    - o room is not used by kids – no need.

- What are some reasons why you may choose **not** to **use** the safety device?
    - o onerous,
    - o broken,
    - o forget,
    - o see it as not necessary over time,
    - o no children present.

E. Questions Specific to Participants with Children (under age 5) Living in the Household

- What are some common **situations when you may leave your child alone** in the house?
    - o When you are in the kitchen making dinner
    - o Your child is playing in the den
    - o Child is taking a nap.

- What is the **longest period of time you would feel comfortable** leaving your child **under the age of 5** in the room by him/herself?

    - o Are there some **rooms** you would **leave the child alone longer** than other rooms?
    - o Are there **any rooms** where **you would never** leave a child unsupervised?

- **GENERAL CHILD DEVELOPMENT/BEHAVIOR:**

- Did you ever **see** a child this age (2-5 years) **play with household items in a way you wouldn't expect** or in a way that is not really suitable for that object?
    - Can you share some examples?

- Have you ever noticed your **children** (under age 5) **playing with or showing an interest** in the blinds or shades in your home?
    - o Have you **ever experienced a close-call** with children playing **with the window coverings** that resulted in a possible dangerous situation?
    - o Have you ever **spoken to your children about not playing** with the blinds or shades in your household?
        - If so, **what did you say** or do?

- Do you think at this age talking to children, reprimanding them, giving rules works?
- Do you think the rules stick?

o Have you ever **discussed safety** around window blinds **with older siblings** or other caregivers?

o Have you noticed if the **window cords are knotted or looped** by children?
o In your opinion, **what age child would be most likely to play with window coverings** and thus need safety devices on the window coverings?
o **Which type of blinds or shades** do you believe may **appeal more to children**?
  ▪ specific features or devices that may be more interesting to them? **[Reference pictures of different blind/ shade types.]**

- Do you think there are rooms that may be more critical for installation of safer blinds?
  o What rooms are those?
  o Are there any rooms you would consider **using a cordless window covering** instead of a safety device?
    ▪ What is your reasoning for doing so? **[If necessary, provide a description of a cordless blind and an example of the product.]**

F. Questions Specific to Participants Who Do Not Have Children Living in the Household

- How **frequently** do children under the age of 5 **visit** your household?

- What **type of safety concerns** do you consider when children are visiting your home?

- Have you ever **noticed these children playing with the blinds** or shades?

G. Questions Specific to Elderly Participants

- How **frequently do children under the age of 5 visit** your household?

- What **type of safety concerns do you consider** when children are visiting your home?

- Have you **ever noticed these children playing with the blinds** or shades?

- Do you **ever experience difficulty working with your window blinds** and shades?

- How **likely would you be to install safety devices** for your blinds and shades?

3. Hands-On Product Exposure

Now, you will each get an opportunity to experience several window shades, blinds, and different safety devices. Once you all have participated in this exercise, we will come back here, and I would like you to provide some feedback on your experiences.

While you are working with the different window covering and safety devices, we want you to please think aloud and describe what you are doing and tell us about any positive or negative feedback you may have. Tells us if you are confused, things you like, things you don't like, anything that comes to mind. I will do a demonstration of the think aloud technique later.

A copy of the installation manual for each blind you will be asked to work with will be present at the station. There is no need to read the installation manual outloud, but please look it over. There will also be instructions for each blind you are asked to work with that detail exactly what we want you to do. As part of the instructions for each blind we will ask you a series of questions. Please read these questions outloud and respond outloud so that our cameras capture both the question and your response.

We will be nearby while you are working with the blinds and shades incase you have any questions. You will have 9 minutes to work with each blind. We will tell you when to move on to the next blind, please do not advance even if you get done early before the 9 minutes is up.

Now I am going to demonstate the "think aloud" technique.

==Do demonstration of "think aloud' using the example of tying your shoe.==

During the hands-on portion, participants will be encouraged to "think aloud" as they perform the tasks. They will also be asked specific questions that pertain to the window coverings or safety devices. Participants will all experience the same types of blinds and shades and safety devices so that they can all speak on to the same topics. Participants will be asked to review the instruction manual for each blind they experience and will also be asked to perform a set of activities when working with the different blinds. Participants will be videotaped during this part of the session.

Instructions for what participants are expected to do with each blind type at each station will be clearly posted. Experimenters will be walking around to help answer any questions and to confirm participants are properly engaged in the task.

4.   Follow-Up Discussion

A. <u>Response to Labels and Instructions</u>

<mark>*Provide participants with laminated copies of the instruction manuals to review at the table and discuss likes and dislikes.*</mark>

- Did you use the written instructions?
  - Were the instructions clear?
  - Were certain instructions more clear than others, if so why?
  - How could the instructions be improved?

- How **confident** are you that you **could have properly installed everything** on your own?

- What appears **unclear or difficult based on the instructions or working with the product**?
  - Are there **aspects of instruction**, **installation, use that you might ignore**?

- Did you notice **any safety information** on the instructions?
  - What **type of information** did the instructions present?
    - How **easy or difficult** was it to understand **the labels** on the window coverings?
    - How **easy or difficult** was it to understand the **instruction manual**?

B. <u>Perceived Barriers to Installation and Use</u>

- How **easy/difficult** was it to **install/use** the different devices?

Installl: Tensioner (Group A and B)

Use: Cleat (Both),
Cord Wind-up (Group A),
Cord Winder (Group B), and
Breakaway feature (Group B)

- How likely would you be **to purchase and install** a safety device?

- **For Renters:**
  - **As a renter with children, how likely are you to purchase/install a safety device?**
    - **How likely are you to request your landlord, etc. to install a different window covering?**
  - **As a renter w/out children, how likely are you to purchase/install a safety device?**

C. <u>Acceptance & Use</u>

If time, use these probes with the different demonstrated cord cleats and cord winder devices.

- In your opinion, **how effective** would ___ *(insert specific safety device and hold up an example, repeat for all types)* **safety devices be in preventing hazards**?

  - How **easy or difficult** was it to **instal**l ___?
    - Please describe any **challenges** you faced
    .
  - How **easy or difficult** was ___ to use?
    - Please describe any **challenges** you faced.

  - Would you use __ **each time** you operate the blind?
    - Are there certain times when you **wouldn't** use it?

  - What are some **potential dangers** that you think may **remain even after a safety device** has been installed?
    - If cord cleat is not installed high enough, child can reach and undo the cord.
    - Alternatively, if tension device is not installed to provide sufficient tension, the opening might be large enough for the child to insert his head).

  - How likely is it that this **window covering or safety device would malfunction** or require repair?
    - What **type of maintenance** do you think this would require?

- **SPECIFIC TO THE <u>TENSION DEVICE</u>**

- For this particular device did you notice if it is **difficult to use if the device is not located in the right location?**
  - Could you lift the blind all the way?
  - What did you think of it?

- How about a **CORDLESS OPTION**,
  - How likely would you be to **purchase this type** of blind or shade?
  - What would **prevent you** (and others) from **purchasing** a cordless blind or shade?
    - *Provide a description of a cordless blind and an example of the product.*

  - What **modifications** can be made to the different blinds to make the blinds safer?

D. <u>Alternative Ideas</u>

- Does anyone have anything else they would like to mention about window coverings or safety devices for window coverings before we conclude the focus group? Are there any issues that we have not raised?

5.   Wrap-Up

Thank you for your time. What we have heard and learned today will help us understand better the use patterns of window coverings and the effectiveness of various window covering safety devices.

- Instruct participants about how they will be reimbursed for their time.

Effectiveness of Safety Devices in Reducing the Risk of Child's Access to Hazardous Cords and Loops: Focus Group Final Report

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July 12, 2016

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Introduction 1

1.1 Background

This report described the detailed methods and findings of focus group research conducted for the U.S. Consumer Product Safety Commission (CPSC) under the project "Effectiveness of Safety Devices in Reducing the Risk of Child's Access to Hazardous Cords and Loops." The full project included a number of additional activities, and is described in the project final report.

Unintentional injuries and fatalities of children in the home are a serious concern, each year in the United States. Young children are curious by nature and are often exposed to ordinary household items that have the potential to cause injuries. One product that has proven to be hazardous to children is window coverings, in particular the cords or loops that are used to raise or lower the window covering as well as open or close the slats.

Between 1996-2012, there were 184 reported fatal strangulations and 101 reported nonfatal strangulations involving window covering cords among children eight years and younger (CPSC, 2014). Using separate data from the National Center for Health Statistics (NCHS) and a CPSC study, from 1999 through 2010, CPSC staff estimates that on average a minimum of 11 fatal strangulations related to window covering cords occurred per year in the United States among children under five years old (CPSC, 2014). Emergency department injury data from the National Electronic Injury Surveillance System (NEISS) for 1996-2012 indicate that an estimated 1,590 children received treatment for injuries due to entanglements in window covering cords (CPSC 2014).

Unfortunately, it would appear that parents and caregivers are not aware of or taking all of the necessary precautions to protect children from cords used with window coverings. Socioeconomic status and living conditions, including living in a rental home, have also been found to be obstacles to the prevention of unintentional injury in children in the home (Smithson, J., Garside, R., & Pearson, M., 2011). In reviewing products currently available, CPSC staff indicate that retail prices for cordless products are generally higher than the retail prices for corded products (roughly $15 to $130 more) (CPSC, 2014). The difference in cost may be a deterrent. Renting a home may also dissuade consumers from installing safer window coverings. Under these conditions, a resident may

not have the option of installing a safer product or may think it is not worth the investment if the dwelling is seen as temporary. Finally, in the case of homes that do not have a child resident, the adult may not perceive a risk to children who are visiting for short periods of time. This may deter the installation of safety equipment to prevent injury from corded window coverings.

The CPSC has had an important role in ensuring the safety of consumer products for over 40 years. One of the issues that the CPSC has targeted is improving the safety of homes by protecting children from dangerous or defective products. For this study, Westat worked with the CPSC to identify the factors that impact installation, use and maintenance of safety devices that are used with corded window coverings. The study examined the interaction of the consumers with the different types of safety devices available in accordance with a range of window covering products in order to determine the factors that affect installation and use of the devices. In addition, the study aimed to identify the different types of barriers that may prevent installation and extended use of these devices such as risk perceptions, supervision habits, and costs and living conditions.

To help address the above factors, Westat performed:

- A review of the product profile and source materials;

- A task analysis; and

- Development and conducting of focus groups.

The study design pathway is outlined in Figure 1-1, and a full report summarizing the findings for the entire study can be found in the report titled, "Effectiveness of Safety Devices in Reducing the Risk of Child's Access to Hazardous Cords and Loops Final Report."

Figure 1-1.   Study design
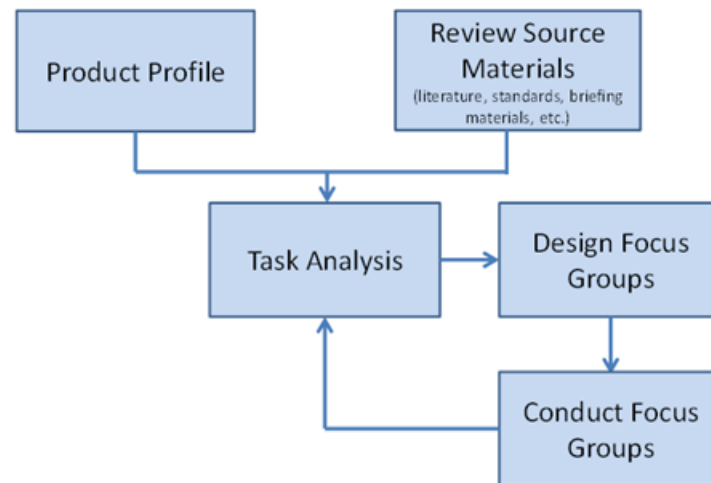
The product profile and source material review served as resources, for the design of and implementation of the task analysis and focus groups. The task analysis served to identify some of the key issues and specific questions to be addressed in the focus groups. While many of the issues addressed in the focus groups were evident at the outset, the task analyses helped to identify additional issues and further refine known issues.

The task analysis identified the key steps in consumer's experience with window coverings, including: initial purchasing decisions, installation of window coverings, installation of safety devices, use of the safety devices, and maintenance of the window coverings and safety devices, and adult supervisory behavior. Warnings, labels, instructions, and point-of-purchase information/display (web-based or store-based) were also included in these analyses. The analyses identified key steps in the process, information requirements, product user feedback, error mechanisms, user knowledge and beliefs, environmental features, window covering/cord characteristics, consumer usage patterns, child behavior and development patterns and adult recognition of them, and so forth.

In parallel with the task analysis, focus group procedures were developed and refined. Several focus groups were conducted to get adequate representation of key demographic groups of interest. Participants for the focus group were selected based on family structure, age, home window treatments, and other demographic factors identified as interesting in the initial phases of the project. The remainder of this report discusses the objectives, methodology, and findings from these focus group sessions.

1.2　Objectives

The overall objective of this project is to provide CPSC with systematic and objective data to support agency decision making with regard to corded window coverings and associated safety devices. The research objectives for the focus group task are:

- Identify the factors that impact installation, use, and maintenance of safety devices.

- Assess how these factors impact the likelihood of correct installation, use, and maintenance.

- Identify how the factors relate to the goal of reducing risk of child access to hazardous cords and loops.

1.3　Approach

The focus groups were designed to provide information on a variety of topics, including the consumer's:

- Pre-existing familiarity, understanding, use, and perceptions of the different styles of window coverings and the potential hazards.

- Pre-existing familiarity, understanding, use, and perceptions of safety products presented: opinions related to the products overall effectiveness, ease of installation/use, cost, potential problems, and willingness to use.

- Challenges experienced and errors made when using window coverings and installing (and using) various safety products.

- Opinions and response to safety labels and installation instructions.

- Perceived barriers to installation and use of both window coverings and safety products.

- Opinions related to children's response to the various products and participant perception of safety risks.

In order to address all of the topics outlined above, the focus group was designed as a sequence of three distinct sections (See Figure 1-2). Each session included an initial discussion on the participant's experiences with window coverings. This was followed by a hands-on portion where each participant was exposed to different window coverings and safety devices currently available

for purchase. Then the focus group concluded with a follow-up discussion of their experience with the various products presented during the hands-on portion.

Figure 1-2.   Focus group design

Methodology 2
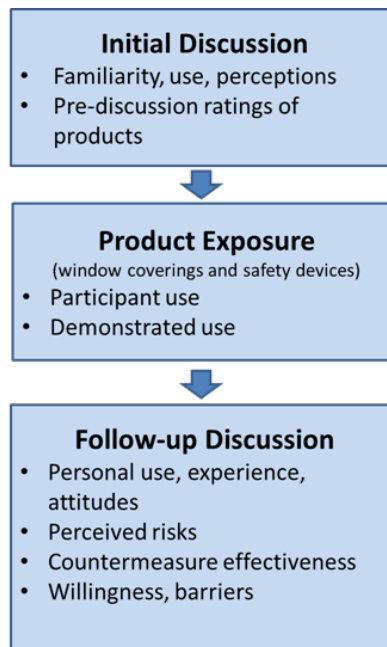
2.1 Overall Study Design

Ten focus groups were conducted in Rockville, Maryland in Westat's User Experience Lab. The introduction indicated federal government sponsorship and described the intent of the focus group. A moderator's guide was used (see Appendix A) which provided explicit procedural details for all aspects of the focus group, including a specific question path and associated scripting. Each focus group session typically included 6 participants, was approximately 1½ to 2 hours in duration, and portions were audio and video taped for review and analysis.

Recruited participants included homeowners and renters, both with and without children. Given that the main focus of this study was to better understand overlooked areas of risk and potential dangers for young children (defined as under age 5), and to explore potential solutions with respect to their interactions with corded window coverings, more sessions (6 sessions) were conducted with participants who currently had young children. It is important to note that the participants without young children currently living in the home still had to meet the criteria that young children regularly visit their home. Participants were scheduled in homogeneous groups, such that homeowners with children were scheduled with other homeowners with children, renters without children were scheduled with other renters without children, etc. Table 2-1 outlines demographic characteristics of each focus group as well as the number of sessions conducted for each type.

Table 2-1.　　Types of sessions

	Homeowner	Renters
With Children	3 sessions	3 sessions
Without Children	1 session	1 session
Older Adults	1 session	1 session

Upon arrival, each participant was given an informed consent and a video release form. Once all participants reviewed and signed both forms, the moderator began the discussion. All sessions were led by a trained moderator and study participants were compensated $75 for their time. The study was approved by Westat's Internal Review Board (IRB) and by the U.S. Office of Management and Budget (OMB). The focus group methodology is described in more detail in the following sections

2.2   Initial (Pre-Task) Discussion

Each focus group began with an initial discussion covering the following topics: the participants' experience with different window coverings and cords, purchasing and installation experience, use and maintenance, perceptions of hazards and understanding of risks associated with window coverings, and topics specific to the demographic make-up of the group (e.g. questions specially targeting experiences of participants with children under 5, those without children, homeowners, renters, and older participants). Specific questions and probes are outlined in the moderator guide (See Appendix A).

As part of the pre-task discussion, several aftermarket safety devices were demonstrated for the participants. Each of these aftermarket safety devices is designed to keep loose cords out of the reach of children when the cord is not being used to adjust the window covering. Demonstrated devices included a Blind Winder, Cord Cleat, Cord Clip, and a Cord Wrap. The Cord Cleat, Cord Clip, and the Cord Wrap can be attached to the window or window frame, and requires the user to manually wrap the cord around the device when not in use to keep out of reach. The Blind Winder allows the cord to retract into the device when not in use. Images of these devices are shown in Figure 2-1.

Figure 2-1.   Demonstrated aftermarket safety devices
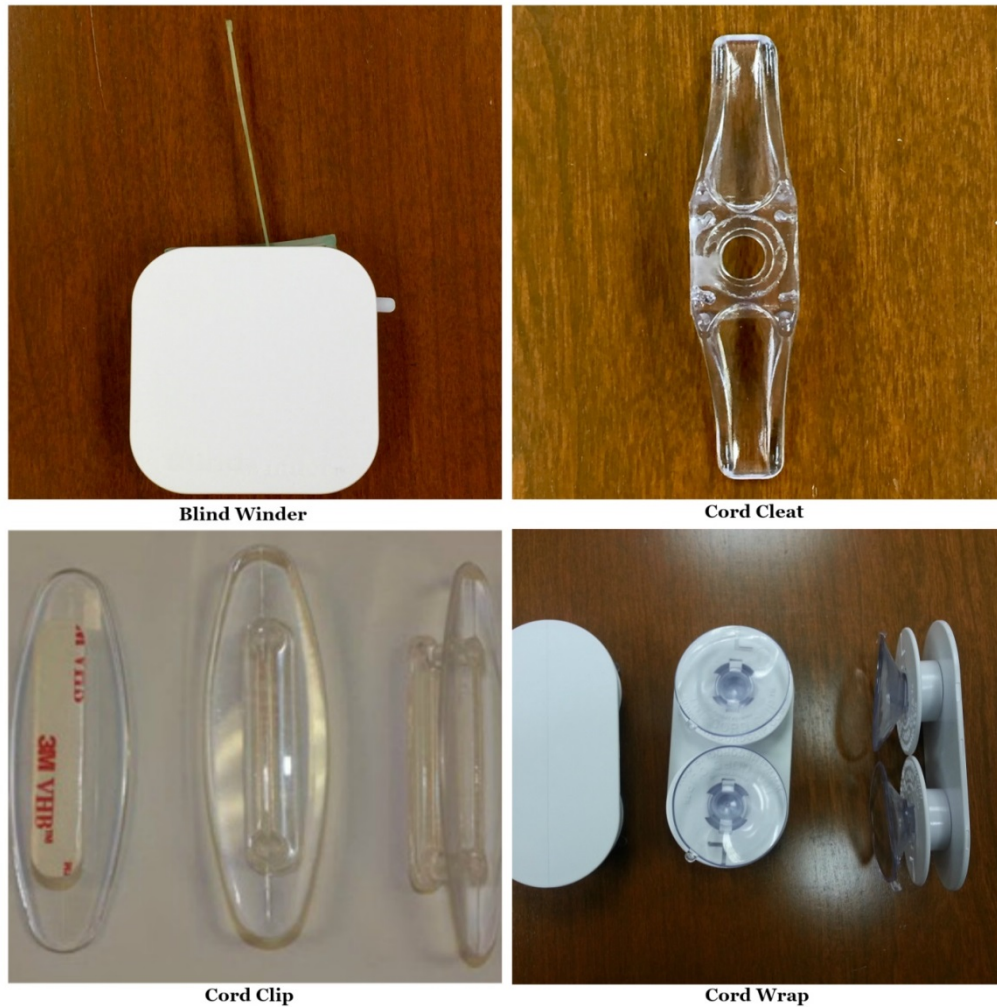
Blind Winder

Cord Cleat

Cord Clip

Cord Wrap

These safety devices were demonstrated in order to gain insight into each participant's previous experience. Participants were asked to indicate (using a written questionnaire) whether or not they were aware of each device, and if they had ever or currently used one in their home. Participants were also asked to share any additional thoughts or comments with respect to features they liked or disliked about each device, it's effectiveness, any problems they may foresee with its use, and if they might consider purchasing such a device for their own home.

2.3　Hands-On Product Exposure

Following the pre-task discussion participants took part in a hands-on task where each experienced a selection of different window coverings and associated features. A total of seven different window coverings were selected from those tested during the task analysis portion of this project.

Given the time constraints of the 90 minute focus group, the window coverings were divided into two subsets of four coverings each (Set A and Set B). Each participant experienced either Set A or Set B, so that everyone in a given focus group experienced and could discuss knowledgeably the same window coverings. Since the aluminum horizontal blind is currently the most common blind used in households it was included in both sets (A and B) so all participants would have an opportunity to work with and discuss their experiences with this blind type.

Each participant was given nine minutes to interact with each window covering. Participants were instructed to "think aloud" when working with the different window coverings and aftermarket safety devices. Prior to the hands-on portion, the 'think aloud' technique was demonstrated using the ordinary task of tying a shoe to demonstrate the process of describing each detail, even parts of the task that seem insignificant.

Instructions were provided to participants for each type of window covering (see Appendix B). These instructions directed each participant to use the window coverings (raising/lowering, changing slat positions, etc.), briefly review of any warning labels and the installation instruction manual, and perform an activity (e.g. installing a cord tensioner, using a cord cleat, testing the cord breakaway device, and using an aftermarket safety device) specific to the window covering. Participants in subsets A and B were asked to perform similar types of activities.

Table 2-2 identifies the selected window coverings, the assigned grouping (Set A or Set B), and the specific activity associated with each window covering.

Table 2-2.   Selected window coverings, set groupings, and associated activities

	Blind	Blind ID #	Operating Device	Activity	
Set A	Faux Wood Vertical Blind	A1	Continuous loop/ tensioner	Use tensioner	
	Honeycomb Cellular Shade	A2	Continuous loop/ tensioner	Install tensioner	
	Blue Corded Roman Shade	A3	Cord/cleat	Use cleat	
	Aluminum Horizontal Blind	A4	Cord	Use Aftermarket Device	Set A→ Cord Wind-up
Set B		B1			Set B→ Cord Winder
	Green Roller Shade	B2	Continuous loop/ tensioner	Install tensioner	
	Brown Faux Wood Horizontal Blind	B3	Cord/breakaway	Test breakaway	
	Bamboo Roman Shade	B4	Cord/cleat	Use cleat	

Note the activity assigned to the aluminum horizontal blind was dependent on the set of window coverings assigned to the participants. For Set A, the participants were assigned the Cord Wind-up, which functions by retracting the cord into the device by winding it around a spool. Set B participants were assigned the Cord Winder, which functions as a cleat, but does not need to be attached to the window frame or the wall. Figure 2-2 shows an image of the two different devices assigned to the aluminum horizontal blind.

Figure 2-2. Aftermarket safety devices tested by participants
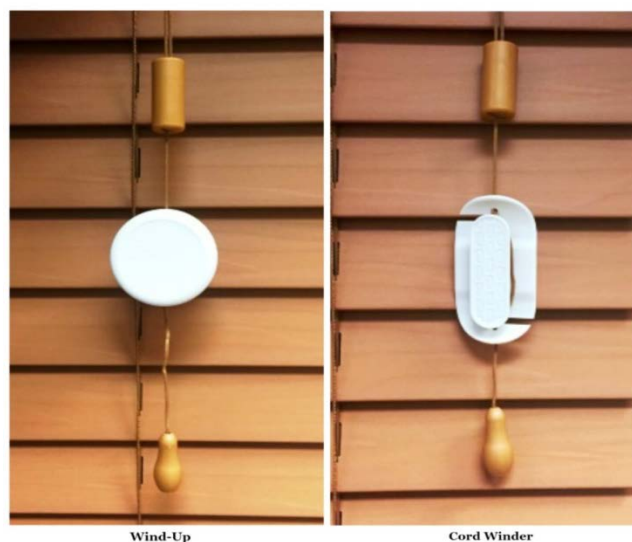
Participants visited four window covering stations. The directions for working each window covering, the installation manual for each window covering, and the instruction manual for any aftermarket safety device that the participant was to work with were provided at each station. Participants were oriented to the location of all the documents when introduced to each station.

When working with the window coverings, participants were in separate rooms so that they felt comfortable engaging in the 'think aloud' task. Each room was equipped with a video camera to audio and video record the participants interacting with the window coverings. Figure 2-3 shows the layout of two stations. Researchers were present to facilitate the move between stations and answer any questions they might have when completing the task.

Figure 2-3.   Example station layout

After interacting with each window covering and performing the assigned activity, participants responded to a set of questions (usually 5-8 questions; see Appendix B for the complete set of questions). Participants were instructed to read each question out loud and then respond out loud so that the video camera could capture their thoughts.

2.4   Follow-up Discussion

After each person had an opportunity to work with the different window coverings, participants returned to the focus group table for a post-task discussion based on their experience. Post-task discussion topics included: perceptions of safety products presented; overall opinion of the window covering related to ease of use; overall effectiveness; ease of installation and use; problems and errors experienced in trying to install and use safety products; response to warning labels and installation instructions; perceived barriers to installation and use; factors associated with their willingness to purchase (cost, availability, etc.); response of children to products, and user acceptance (specific topics are outlined in the moderator guide in Appendix A).

2.5   Participant Recruitment & Scheduling

A total of 67 people were recruited for the study. Fifty nine people participated in a total of ten focus group sessions and one pilot session. Each session included between 5-6 participants. Participants included both homeowners and renters, homes with children under the age of 5 and those without children in that age demographic. Older participants (aged 65 and older) were also included in the study (both renters and homeowners). Participants were roughly distributed to include equal percentages of males and females, and include a range of demographic and socioeconomic groups. All participants were recruited from the Washington Metropolitan area.

Participants were provided the option to be screened by telephone or through an online screener instrument, developed through the web-based tool, Survey Monkey (refer to Appendix C). The main eligibility criterion for the study was that participants must have window coverings (of some sort) in their home. In addition, the screener instrument collected:

- Demographic information, including age, sex, race, ethnicity, household income, etc.;

- Homeownership status (renter or home owner);

- Frequency of child visits to the home;

- Experience with window coverings, including type in their household; and,

- Experience with safety devices for window coverings.

Recruiting these diverse population groups was challenging, therefore, a variety of recruitment strategies were employed. Participants were primarily recruited online through Westat's internal website and Craigslist. Study advertisements were also placed in several local newspapers and flyers were posted. To target some of the harder-to-reach demographics, which included the population of renters with children under 5 and older renters, ads were developed specifically appealing to these demographics on the Westat and Craigslist postings. Flyers were posted at local senior centers and grocery stores in areas that had higher populations of senior citizens. Flyers provided a telephone number for participants who opted to be screened by telephone in addition to a link for the online screener instrument. Neither the recruitment materials nor the screener indicated that the focus group was related to child safety. Rather, it was described more generally related to consumer purchasing and use of window coverings.

2.6   Participant Sample

Six or seven participants were recruited for enrollment in each session. A seventh participant was recruited as a back-up position in the event that a recruited participant failed to show up. A total of 59 participants were enrolled in the study (36 Females and 23 Males). Every effort was made to recruit and schedule a balanced number of participants with respect to age and gender. However, more females than males fitting the characteristics of the various groups responded to the recruitment efforts. Table 2-3 provides a demographic breakdown of all participants.

Table 2-3.   Participant Demographics

	Homeowners	Renters
Gender		
Male	17	6
Female	15	21
Total	**32**	**27**
Age		
18-35	8	14
36-45	13	6
46-55	3	1
56-65	2	3
66+	6	3
Total	**32**	**27**
Children Living in Household under age 5		
w/Children	20	16
w/out Children (under 5)	12	11
Total	**32**	**27**
Income		
Household income less than $50,000	-	13
Household income between 50,000-99,999	14	6
Household income greater than $100,000	17	5
Did not answer	1	3
Total	**32**	**27**

As previously mentioned, participants were scheduled in homogeneous groups. Participants were also scheduled so that roughly the same number of people would experience window covering Set A as Set B. The session breakdown is evidenced by:

- 33 participants experienced Window Covering Set A

  – 10 Homeowners with children under the age of 5

  – 11 Renters with children under the age of 5

  – 6 Homeowners without children under the age of 5

  – 6 Older Renters

- 26 participants experienced Window Blind Set B

  – 10 Homeowners with children under the age of 5

  – 5 Renters with children under the age of 5

- 5 Renters without children under the age of 5 (but have children who visit)

- 6 Older Homeowners

Data Collection & Analysis Procedures 3

The following section describes data collected and the methods used to analyze the data.

3.1   Focus Group Discussions

Data was collected during the focus group discussions through summary note taking, audio recordings, and a questionnaire. The audio recordings and notes provided qualitative data for analysis, while the questionnaire provided a numerical count of the participants' familiarity with and experience with the aftermarket devices. Notes and audio recordings from the different sessions were reviewed and summarized. Items of interest were clustered together by topic and direct quotes from participants were selected. These summary notes enabled the identification of any trends within the different demographics and sessions, as well as highlight unique or varied perspectives.

3.2   Hands-On Product Exposure

During the hands-on portion of the focus groups, participants' interactions with the window coverings and devices were video recorded. Allowing participants to interact individually with the different window coverings would result in findings that may not have been shared in the group setting or may not have come to mind unless the participant was able to see and physically work with the window coverings and safety devices.

After videos were edited, video coders uploaded them into a coding program. Morae Manager (v. 3.3.4) was used. Video coders reviewed the video and identified the window coverings that were assigned to each participant. Coders then watched the video and inserted "markers" to flag notable events. These markers included:

- Start/Stop – marks when a participant began working with and stopped working with each window covering.

- Read manual –marks when a participant reads the installation manual. This marker was used twice to indicate when the participant started and stopped reading the manual. If the participant referred to the manual multiple times while working with the window covering, each time was marked.

- Frustration – marks when a participant either expressed frustration or showed nonverbal signs of frustration.

- Confusion – marks when a participant expressed uncertainty either audibly or visibly.

- Installed correct – marks when a tensioner was installed correctly by the participant.

- Installed incorrect –marks when a tensioner was installed incorrectly by the participant.

- Cord cleat tested – marks when a participant used the cord cleat.

- Breakaway tested – marks when a participant attempted to break open the breakaway device.

- Comment –enabled the coder to record observations or specific quotes the participant said about their experience.

Video coders recorded the participants' comments, verbatim, in a separate document. The questions aimed to capture the participant's opinion of the window covering and safety device with respect to functionality, safety, ease of installation and use, etc. The questions also were intended to gather the participant's opinion of any safety risks present as well as help better understand if certain tasks proved more or less challenging.

There were several stages of quality control checks for the video coding process. First, a staff member reviewed each Morae file to ensure consistency between coders in terms of classification of markers, number of tasks, and classification of installation status. Once all Morae output files were concatenated and sorted, a final data set was cleaned manually. The final data set consisted of files with indicator markers (as described above) and time stamps indicating how long participants engaged with each window covering and the different associated activities. Any missing or extraneous variables were reviewed and modified accordingly. Any modifications made in the data set were also changed in the original Morae file. The complete video coding protocol and coded elements can be found in Appendix D. The quality control procedures can be found in Appendix E.

Focus Group Findings 4

4.1   Initial Discussion

Below are the findings from the initial (pre-task) discussions with participants.

4.1.1   Participant Experience with Window Coverings

Participants were asked to discuss the different types of window coverings that they have in their homes. Consistent with previous research, the horizontal aluminum blinds were most frequently owned by the focus group participants. Overall, the two most common window coverings that homeowners had in their home were the Honeycomb (Cellular) Shade and Horizontal Blinds (both Aluminum and Venetian/Faux Wood). A few participants noted that they had the cordless version of the cellular shades. Renters more often reported having the Horizontal (Aluminum) Blinds in their home, followed by Horizontal (faux wood), and then Vertical Blinds. Older adults most commonly reported having both Horizontal Blinds (aluminum or faux wood), and Vertical Blinds. Overall, the least common window coverings included the fabric and bamboo Roman Shades. Table 4-1 lists the various window coverings that were represented in the homes of focus group participants. Note, participants were asked to indicate all types of window coverings in their homes.

Table 4-1.   Window coverings represented in participants' homes

	Vertical Blind	Honeycomb / Cellular Shade	Roman Shade	Horizontal (Aluminum) Blind	Roller Shade	Horizontal (Venetian/Faux Wood) Blind	Roman (Bamboo) Shade
Homeowners w/Children	6	10	0	8	5	10	4
Homeowners w/out Young Children	4	3	1	6	1	2	0
Renters w/ Children	5	2	1	10	1	6	1
Renters w/out Young Children	2	0	0	5	1	0	0
Older Adult Homeowners	3	2	1	6	3	4	0
Older Adult Renters	4	0	0	4	0	1	0
Total	24	17	3	39	11	23	5

When asked if their homes came furnished with their current window coverings, participant responses varied with respect to whether they owned or rented the home. The majority of the participants who currently rent indicated that their home did come furnished with window coverings, and most often they were aluminum or plastic horizontal blinds. Several homeowners noted that their homes came furnished with window coverings as well.

Two or three participants in each session indicated that over time they replaced some or all of the window coverings in their home. Their reasons for doing so were most often aesthetics or to replace a window covering that had broken. Only a few participants cited safety as a reason for replacing the window coverings. It is important to note that most participants who replaced window coverings indicated that they did so over time, by replacing one room at a time, due to the cost involved.

Several participants mentioned that they were aware of safety issues surrounding window coverings, but that other factors, such as budgetary concerns, prevented them from replacing their current window coverings with a safer alternative. Among the renters, only a few indicated that their rental agreement or management company prohibited them from replacing the coverings. Several renters indicated that they were allowed to replace window coverings, but were first required to request permission from the landlord or management company. Of those renters who replaced the window coverings, some indicated that they will need to re-install the original window covering when they move out. Whereas other renters cited that they were able to request replacements from the management company or purchase new coverings and deduct the cost from the rent.

When asked about the age of the window coverings in their home, a majority of the renters had newer window coverings, compared to homeowners. Based on the participants' description, window coverings are replaced in rental units when new tenants move in, and therefore, the age of the window covering directly corresponds with the length of time the current tenant has been living in the unit. It was also noted that it was not uncommon for those individuals who cited living in the same home for an extended period of time (e.g. over 20 years) to also have window coverings that were commensurate to the time they had lived in the home. For example, in the older homeowner session (ages 65+), participants estimated their window coverings to be up to 30 – 40 years old.

Participants in all of the sessions agreed that most rooms in their home had window coverings and most participants indicated that furniture, toys, or other items were often located near or directly under the windows. Participants often used the words "under", "next to", "right up against", "in front of", and "nearby" to describe the location of objects placed by the windows. Several participants said they had chairs, couches, tables, dressers, nightstands, desks, beds, headboards,

cribs, toy furniture, plants, and other items within an arm's reach of the window. One participant explained, "I live in a Cape Cod style home, nothing is far from a window."

It is important to note that a number of participants explained that they have furniture directly in front of the window in order to block their children from accessing the window. Conversely, several participants said that they intentionally do not place furniture (beds or cribs) near windows. One person mentioned having "plastic wrap" covering the entire window, including the blind. She indicated that this is a safety precaution because the windows are low and she was concerned about her child falling out.

4.1.2   Purchasing Considerations

Almost all of the homeowners indicated that they purchased window coverings, compared to roughly half of the renters. Those who purchased window coverings mentioned buying them both online and in brick and mortar stores. Stores included: Wayfair.com, Amazon.com, Target, Ikea, Bed Bath & Beyond, Costco, Home Depot, J.C. Penney, Wal-Mart, Blinds To Go, Pier One, Macy's, Lowes, Next Day Blinds, Thomas Shades, Blinds.com, and Overstock.com. Blind specialty stores, such as Next Day Blinds, Blinds To Go, etc. were mentioned in 7 of the 11 sessions (6 of which were with homeowners). Of the big box stores, Home Depot was mentioned most often and seemed to be where a large percentage of the focus group participants purchased their shades or blinds.

When selecting window coverings participants listed: cost, appearance, durability and quality, ease of installation, cleaning and maintenance, fit, thermal functions, and safety for children and pets as the main factors impacting their decision to purchase.

4.1.2.1   Cost and Aesthetics

Cost and aesthetics were primary factors for most participants. One participant admitted that she usually selects the cheapest blind option and also indicated she usually does not even measure window frames prior to purchasing. In her words, "I just make it work… all I care about it getting a blind and getting out of the store." A different participant admitted that she opted for appearance over safety. She described one of the corded window coverings in her home as very heavy and difficult to use, but despite this she is unlikely to replace it because "It looks cute." Another said, that the primary factor was "strictly cost". Most participants felt appearance was important, and all windows should look uniform.

4.1.2.2 Maintenance and Functionality

One participant indicated that maintenance requirements factored into her decision to purchase a shade over a blind, stating that, "…blinds you have to dust frequently, shades not so much." Others referenced thermal or energy-based reasons for purchase. Several suggested that having a blind or shade helps regulate temperature in the home as well as blocks out light. A few participants in different sessions mentioned that they considered "black-out" or light filtering blinds with the hope that it may allow their children to sleep in longer in the morning.

Several participants cited that durability was an important factor. One participant mentioned that he purchased wooden blinds for the children's rooms as opposed to aluminum or plastic due to a concern that the children would break the aluminum or plastic blinds. His children, "… like to look out the window," and the children previously bent and broke pieces off of the aluminum horizontal blind.

4.1.2.3 Safety and Hazards

Some participants cited safety reasons and hazards for selecting the specific window coverings in their home. Of these, most identified the cord as a safety hazard and therefore, opted for cordless. One participant selected the type of window covering based on the function of the room. That is, they opted for cordless blinds in the nursery and the child's bedroom, but did not spend the additional money for the cordless option in other rooms of the house. In addition, one participant indicated that it was very important for her blinds to be "ecofriendly." She wanted to make sure to purchase a blind that was not hazardous if her "… child were to put it in his mouth." She added that the sales representative at Next Day Blinds was able to make suggestions on which window coverings she should get with respect to safety for children.

4.1.3 Purchasing Experience

When purchasing the window coverings, only a handful of participants mentioned seeing any information or discussing anything with a sales representative related to safety and potential hazards. Of the few participants that mentioned discussing safety with a sales associate, all said these discussions occurred at a window covering specialty store, and not at one of the big-box stores.

Most of the assistance from a sales associate was related to how to measure the window covering or where to locate a specific product in the store. When asked if a sales associate spoke to them about

safety or potential hazards, most participants said, "no." One participant was handed a brochure that presented some safety hazards related to the cords. A few participants attributed this lack of safety information to the fact that it is "common sense." One person said, "It is more just knowledge and logic; [like] 'ok a cord is probably not safe,' lack of a cord is safer than having a cord." One participant felt that sales associates (at the home improvement stores) do not guide the consumer on the best window coverings to buy, but simply direct the person to where the window coverings are located in the store.

> "I never really see them engage with me personally… they don't say this is the best blind for you, they just take you to that aisle. So it's not like you get any help or information about the blind you are buying unless you read about it yourself. Whereas with Blinds to Go, they will engage you more as far as safety goes."

While most did not recall seeing safety information in the store or online or discussing safety with anyone, a few participants did recall seeing safety messages directly on the demonstration window coverings that were displayed in the store.

4.1.4   Installation

The majority of the participants who bought window coverings opted to self-install rather than use a professional. The installation was typically performed by a family member, friend or by the individual. Cost was most often cited as the main reason for this decision. When window coverings were professionally installed, participants generally indicated that they purchased them at a specialty store, and it was part of the purchase package.

Participants were mixed on their opinions of the installation process. While some felt the process was straightforward, others felt it was frustrating initially but after installing the first shade or blind the rest were easier to install, and still others said it was very confusing. Participants most often attributed their frustration to their homes having custom or "awkward" sized windows, making the fitting process somewhat challenging. Throughout different focus group sessions, several people believed there was a learning curve associated with window covering installation. That is, "once you have installed one, the rest are all pretty much the same."

Many participants admitted that they did not use the installation manual, at least not at first. One participant said, "You don't look at them (the installation instructions) until you run into a problem." This sentiment was also expressed by many others participants across the different

groups. Another participant explained, "I am not a big instructions person." Of those participants who did read the instructions, several admitted that they paid more attention in the beginning of the installation process and less attention to the instructions towards the end. As one participant explained, "… at first you read the directions, but just like any guy, I kind of skim over them a little bit." Another participant said, "Initially I did look at the instructions, but after a while, I was like, I got this." In general, when participants reviewed the instruction manual, it tended to be a brief review or they skimmed through the material.

A majority of the participants did not install all of the parts that came with the blind or shade, and some admitted to reusing parts from the older window coverings. Most of the participants said they had extra mounting hardware and a few mentioned not installing the hold-down brackets or anchor clips that hold the blind or shade in place within the window frame. When asked if the window covering came with any additional accessories or extra parts, most of the participants said "yes." One participant said, "I throw out about 32 extra pieces after the install." Later on in the focus group when the cord cleat was demonstrated, this same participant exclaimed, "Oh that is one of the 32 extra pieces that I throw out."

While installing their window coverings, several other participants also recalled that their window covering came with a cord cleat. However, only about half said they actually installed the cleat. Of those who installed the cleat, most admitted that they do not use the cleat all of the time. Participants listed the following as times when they would be more likely to use the cleat:

- when children are younger or at mischievous/curious age,

- when children are visiting the home;

- when their dog was a puppy, or

- if they have a very long cord and do not want it to gather on the floor.

Conversely, participants were less likely to use the cleat if they adjust the window covering frequently, if the children did not seem interested in the window coverings, or if they simply forget. One participant was given a cord cleat by her social worker, but was never instructed on its function or how to install it; and therefore, never used it.

When participants were asked if they recalled seeing safety information or information related to hazards during the installation process, there was mixed responses. Most of the participants who reviewed the installation manual did not recall seeing safety information in the manual, or if it was

present, they did not recall reading it. Only one person recalled, "... seeing something about the cord" in the installation manual. Another person said, "If safety is a concern, it should be on the front page of the instruction manual."

While most did not recall seeing safety information in the manual, participants did recall seeing safety information on the window covering itself. Participants referenced warning tags on the cord and stickers on the bottom and the top part of the window coverings. Participants also remembered seeing warnings and safety information on the packaging. It is important to note, many of the participants admitted to not actually reading the warnings, but all of them were positive they understood the message. Most said the hazard had to deal with choking or strangulation, and many participants were able to recall an orange or red label with the graphic of a young child or baby with the cord wrapped around its neck. One person recalled a different warning related to the breakaway feature on one of the blinds in his home. He also admitted that he did not review the manual to learn how it worked, but assumed that if too much tension was applied the cord would break.

4.1.5   Use & Maintenance

Interactions with the different window coverings in participant's homes varied based upon how frequently they utilize the room, weather, time of day, and the type of window covering. In general, participants felt that there are some windows coverings that they adjust daily, but others will remain stationary for long periods of time. Some participants said adjusting the window coverings in the entire home was part of their daily routine, and described the process as, "… open the blinds in the morning and close the blinds at night." Several participants with horizontal blinds indicated that they rarely adjust the height of the blind, but do frequently adjust the degree to which the slats are open. Most of the participants with younger children said that they do not let their children open and close window coverings.

Many participants made modifications to the cords. An average of one-to-two participants per session mentioned that they tie up the extra length of cord. Most explained that they did this to keep it out of reach from children and pets, but others said it was for aesthetic reasons because they did not like the extra cord gathering on the floor. Similarly, other participants mentioned that they will wrap extra cord around the window frame, over the mounting hardware, or through one of the top-most horizontal panels to get it out of the reach of young children, etc.

Participants often cited frustration when using the cords on horizontal blinds, indicating that is very difficult to adjust the blind and get the blind to lie straight or balanced. As a solution, participants

said they would tie the two cords together (creating a continuous loop from two separate cords) to help create even tension when raising and lowering the blind. Others tend not to adjust the horizontal blinds often, one indicated, "It's all the way up or all the way down." Other window covering modifications mentioned include:

- Shortening the vertical blinds,

- Shortening the cord by cutting it and re-tying the knot,

- Using an aftermarket safety devices (cord cleat and a cord wind-up were two that were specifically mentioned), and

- Removing the wand to prevent children from using it as a play device.

One participant said, "We get rid of the rod... the kids tend to make swords out of them." He and his wife will remove the wand when not in use, hide it from the children, and then put it back on when they need to adjust the blind.

Several participants cited several problems that they have had with their window coverings. In addition to the issue of the horizontal blind being very difficult to maneuver with respect to the blind being crooked, participants also cited vertical blinds as very problematic. Several participants have experienced vertical blinds breaking, either by the blind panel falling off or by the blinds getting stuck in one position. One person said, "My pet peeve is with the vertical blinds, I have kids that run by them and the thing falls off. Also, if it just happens to be turned inside and you got to twist it, it also pops off." Several participants in this session agreed. Others discussed:

- Broken wands,

- Worn out mechanisms within the blind causing it to move slower,

- Broken or bent slats on horizontal blinds,

- Cord getting stuck in the couch cushion (because it is too long),

- Cords breaking,

- Sagging blinds from being warped by the sun, etc.

Most participants admitted to trying to live with the broken window covering or trying to repair when possible. A few participants pointed out that it is difficult to replace just one window covering, especially if it matches other window coverings in the room and this is why, "You just live with it." In contrast, a few participants did mention that if their blind or shade was broken they

would replace it. Several participants admitted that they likely would replace the broken window covering with a cheap option if they thought the replacement would be break again. As an example, one participant said, "When the kids were younger we bought cheaper blinds because they would play with them and break them." One participant explained that her husband has had to repair one blind in her home several times. She explained that this particular blind is encased within glass panes and operated by a lever which gets stuck, or becomes uneven. The only way to fix this blind is to remove the panel of glass. In her opinion, "It's a nice safety feature, but it can be a pain."

No one in any of the groups was aware of any formal maintenance that needed to be done for any of their window coverings and most participants admitted that they rarely even clean their blinds or shades. A few participants said they will periodically dust the horizontal blinds in their home, but not regularly.

4.1.6   Perceptions of Hazards / Understanding of Risks

In every session at least one participant (and often more) mentioned that window coverings can be hazardous to children. One of the first safety hazards addressed in each session was the possibility of strangulation in the cord. When asked how they had heard about strangulation being an issue, participants commonly cited sources such as:

- News media,

- Social media,

- A friend, in a "new moms group,"

- At the daycare provider,

- Infomercials, and

- Public service announcements (PSAs).

Some participants mentioned that they had not seen or heard anything recently about cords posing a risk; and therefore, thought that perhaps it was not as much of an issue anymore. One participant said, "I sort of feel like maybe 15 years ago it was more prominent." Others attributed the lack of attention to the matter to the fact that stores were phasing out corded window coverings.

Some participants felt it was, "common sense" that the cord could pose a safety issue. When asked who is at risk, participants felt that mostly younger children (specifically children ages 3 and 4) and

pets. One participant recounted a story about her friend's cat that got its tail caught in the blind and it needed to be amputated. Similarly, another person mentioned that she purchased cord cleats to keep the extra cords away from her pet bunny. Approximately one-fourth of all the participants in each focus group session mentioned activities that appeared to be proactive with respect to window cord safety. That is, some purchased cordless window coverings in order to remove the child's access to the cord, others purchased a cord cleat or other safety device, or others simply tied the extra cord up moving it out of reach.

In addition to the cords, participants were also concerned about children choking on the small plastic caps at the end of the cord, window coverings falling on children, children getting cut on the sharp corners or edges of certain blinds or shades (vertical blinds and the horizontal aluminum blinds), children using the wands as swords, and the window coverings being a fire hazard, etc.

Not all participants shared the same sentiments with respect to the hazards associated with window coverings. One person stated, "Of all the things in my house that could kill my kid, the window blinds are low on my list." Another person mentioned that it was difficult to convince her husband to childproof the home; and therefore, she had to select items that she could do herself without his assistance. As a result, she ended up purchasing a cord cleat to keep the cords out of reach from the children because, "It was easy to install and only took two screws." This participant also admitted that while safety was a big reason for purchasing the cleat, she was also worried about social judgment. That is, "… I did not want other parents coming over and thinking I was too relaxed with baby proofing and child safety."

When asked if anyone knew of a close call or a potentially dangerous encounter with window cords, three participants shared stories of their children. The first participant's daughter was playing in the living room by herself and when the participant checked on her the child was completely tangled in the cord. In her words, "The cord was wrapped around her entire body and her neck. She was caught and could not move. It was kind of funny because of how helpless she was." The same participant said her daughter also likes to loop the cord around the dog's neck, and try to get the dog to walk forward to raise the window blind. Another participant mentioned that her daughter likes to put the cord around her neck, and pretend she is a dog and the cord is a leash. The third participant mentioned a close call with a friend's child who they think was trying to climb on the couch and fell which resulted in the cord around his neck. This child was "ok", but suffered from rope burn.

When asked if they were aware of any safety devices or methods to help alleviate the hazard associated with the window cord, several participants mentioned their method of tying up the cord

so it is out of reach. One participant described this approach as, "… effective, quick, and free." Other participants referenced cord cleats and a portion of participants indicated they had cleats in their home. According to the questionnaire, 15 of the 59 participants indicated that they have or previously had a cord cleat in their home. However, of those participants who had cord cleats most admitted to being part-time users. One participant (a grandmother who has children visit) said, "I do try more when the kids are there, but I am not very good at it. I would say I am not conscious enough, but I am a little more conscious [when they are around]." Another participant said (in reference to the cleat), "Blinds always come with that. Sometimes I install it and sometimes I do not." When asked if there was a particular reason why he chooses to install it, the participant could not think of a reason. One participant said that her horizontal wood blinds came with a breakaway feature, but she thought the intended function was to help keep the blinds even when raising and lowering them. Another person was frustrated that after spending all the money on the window covering she would have to spend more money to make it safe. In her opinion the manufacturing company should just make safe products.

4.1.7   Demonstration of Aftermarket Safety Devices

The focus group discussion included a demonstration of several aftermarket safety devices and participants were asked to respond to a brief questionnaire. The aim of the questionnaire was to understand the participant's prior knowledge and experience with the aftermarket safety devices. In order to do so, participants were asked to respond to the following questions after the researcher demonstrated the aftermarket device (see Appendix F):

1. *Before today, have you ever seen a _____ before?*

2. *Have you ever purchased or used the _____ device in your home?*

The questionnaire also included a section for participants to fill in their thoughts and considerations about each device.

The aftermarket devices selected were a Blind Winder, Cord Cleat, Cord Clip, and Cord Wrap, all of which are designed to shorten excess cord (See Figure 2-1).

The results of the questionnaire responses are broken out by participant demographic group below:

■   Homeowners with children under age 5 – 20 total participant responses

■   Homeowners without young children (under age 5) – 6 total participant responses

- Renters with children under age 5 – 16 total participant responses

- Renters without young children (under age 5) – 5 total participant responses

- Older Renters – 6 total participant responses

- Older Homeowners – 6 total participant responses

It is important to note that due to the study design, these groups did not contain the same number of participants. Since the study primarily focused on participants with children under the age of 5, there were several sessions held for these demographic groups (refer to Table 2-1 in this report for a description of the different sessions). Figures 4-1 through 4-4 depict percentages of participants in the different demographic groups that had experience with the aftermarket safety devices. Since the groups did not contain equal number of participants, the percentages are not necessarily comparable to each other.

Cord Cleat

Figure 4-1.   Participants' previous experience with the Cord Cleat
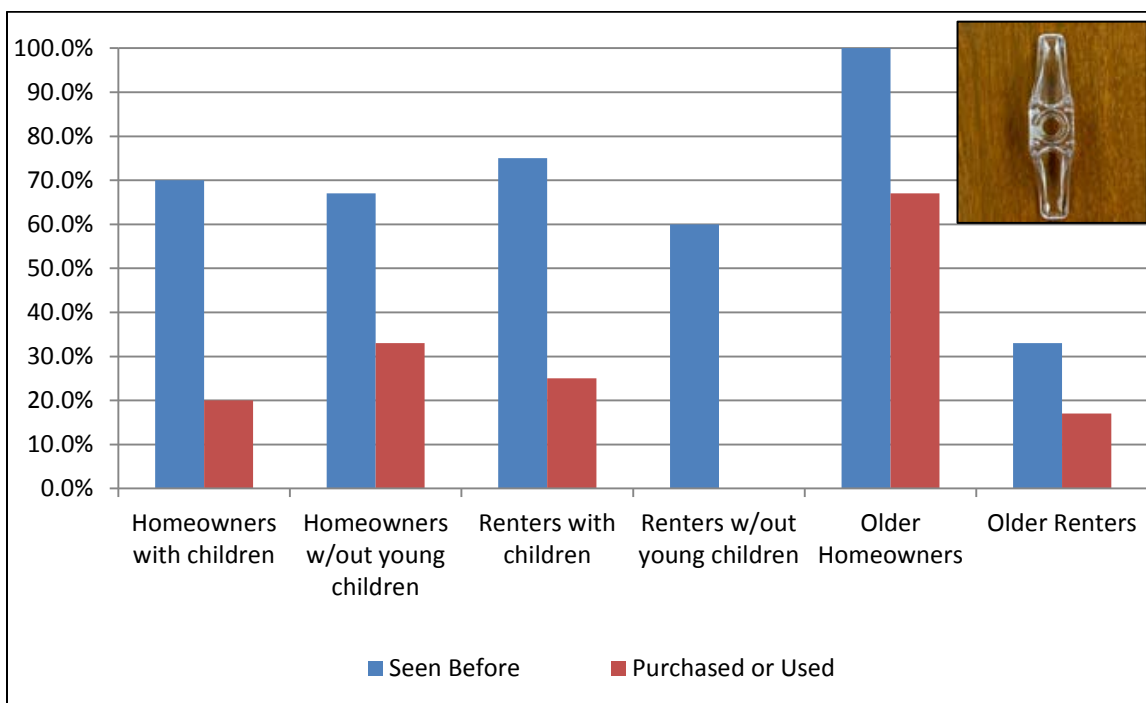
Participants in every demographic group were more familiar with the Cord Cleat than any other aftermarket safety device presented. In fact, the Cord Cleat and the Cord Wrap (see below) were the only two devices that participants had actually purchased or used in their homes. Interestingly, all of the older homeowners said they were familiar with the Cord Cleat, and approximately 66%

purchased or used one before. Less than 40% of all the participants in the other demographic groups indicated that they had used or owned one.

Homeowners

Homeowners with children generally prefered the Cord Cleat over the other aftermarket devices presented. Respondents commented on this device's functionality, agreeing that the Cord Cleat was more aesthetically pleasing (in comparison to the other devices), effective, sturdy, and easy to use. Overall, homeowners liked that this device could be mounted on the wall, and felt that it was the least obtrusive. Participants in this group also noted that this device was "simple" to use, especially in comparison to the Blind Winder. Several homeowners with children noted that they would actually purchase this device. Conversely, its functionality and safety was overriden by appearance for one participant, who wrote "I do not like the look, but it solves the problem and eliminates the risk for children and pets."

Homeowners without children focused predominately on how the cord cleat operates, they all agreed that wrapping the cord around the prongs would be "tedious." One participant actually had a cord cleat in their home and noted, "It is never used because it requires wrapping and unwrapping of the cord each time." Another wrote, "I used to have them in my old home. They were nice, but an absolute pain to actually use on a regular basis."

Renters

Most renters with children tended to agree with the opinions of homeowners with children, saying the cord cleat was small, simple yet effective, and secure. One noted, "Seems basic. Very easy for anyone to install." The fact that this device is mounted to the wall or window frame differentiated it from the Cord Clip and Cord Wrap, in that it is perceived as more secure. Several participants noted that they would actually use this device. Additionally, a couple participants indicated that they would consider purchasing one. One person said, "I would purchase if I had small children at home." One participant did note that the device "could be useful" but mentioned tangling as a potential problem.

On the other hand, one renter without children felt that this device is "… very complicated, [and] too much to wrap around." One potential problem noted by a couple of participants was that this device may cause the cords to easily become tangled. Another potential problem noted by this group of participants is the accessibility to children, and that "… children may see you using it and think

they have a new toy." One participant thought that they would consider purchasing, if they "… had curtains to hide it [the cleat] behind."

Older Participants

Of all the aftermarket safety devices, the Cord Cleat was the device with which most older participants had prior experience. Older renters were split on whether or not they would purchase this device. Those who were not interested, felt "… this device would be too complicated to use." One participant wrote, "Seems like too much trouble," and "Unsure how to operate it." Coversely, most of the older homeowners reported using the cord cleat and having a favorable experience, saying "This has worked for me."

Blind Winder

Figure 4-2.   Participants' previous experience with the Blind Winder
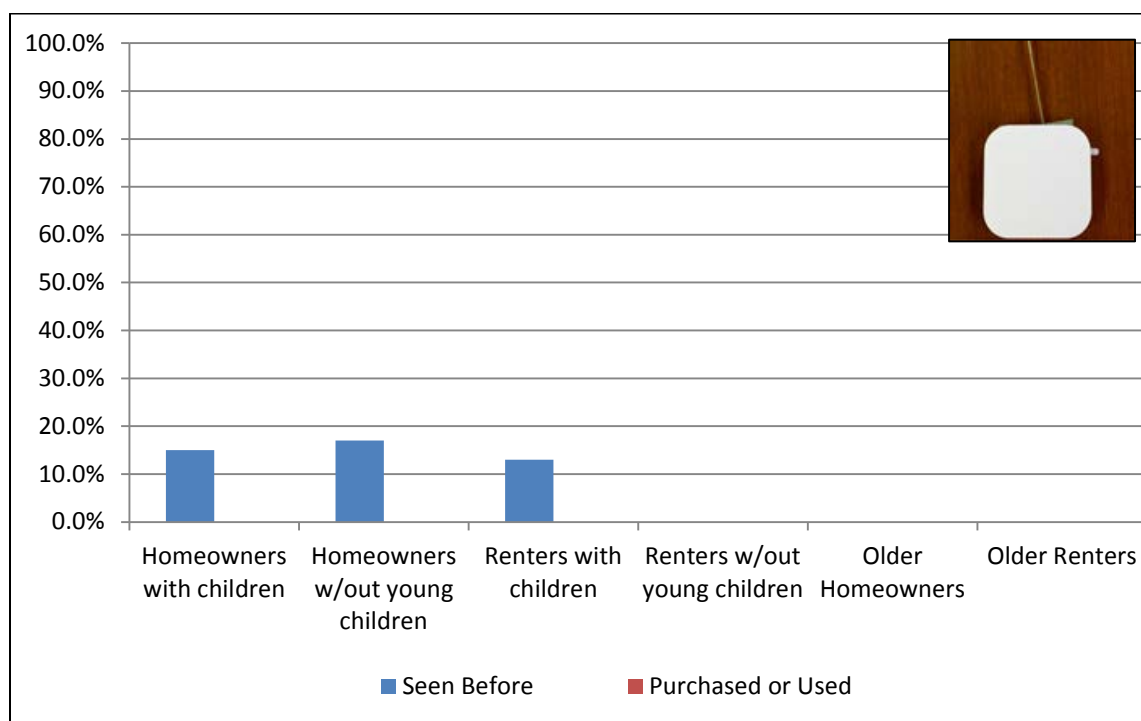
None of the renters without young children, older homeowners, or older renters had seen the Blind Winder previously. Of the remaining participants (homeowners with children, home owners without children, and renters with children) less than 20% of the participants in each group were familiar with the Blind Winder. Additionally, no one in any of the groups had purchased or used one before.

Homeowners

In order to thread the cord through the Blind Winder mechanism, the user needs to cut the cord. Homeowners with children disliked having to cut the cord in order to operate this device. One participant commented "I don't think I would buy this because you have to cut the cord, and if you have to return [the window covering] you may not get a refund because the cord is cut." Another participant said, "The cutting of the cord might dissuade me from purchase." Others pointed out that in addition to the damage caused by cutting the cord, installing this product would also add extra steps in the installation process.

Several homeowners were concerned about the appearance of the Blind Winder and how it would look resting next to their window coverings. Some inquired as to whether it might come in different colors.

One participant did not like any aspect of the device, "I don't like the look of the box. Also, it is not user friendly and may draw children into playing with it." Other participants also shared the same concern regarding this device attracting children. One parent was concerned about this object's safety, "Looks dangerous for kids. It could hit them in the face."

Homeowners without children were unsure about the functionality and operation, as well as the aesthetics of this device. One participant noted, "Don't know if the device will last long without breaking," and another was "Unsure how to operate it." Additionally, this group commented that this device would "break easily," and had a "… higher chance of malfunctioning." However, some participants in this group expressed more fondness of this device, with one commenting "Looks like an interesting idea to keep cords neater," and another who said "Very reassuring regarding safety. Would love to use this."

Renters

When asked to comment on this device, renters with children made similar comments to those of homeowners related to the device's functionality, aesthetics, and the possibility of children wanting to play with it. Several of the renters called this object "bulky." Similarly, multiple participants noted that this device seemed more likely to malfunction. One noted "It is probably a good idea as far as getting rid of the cord, but it appears it might break or make a kid curious to play with it and pull on it." Another participant described it as, "Not pretty, problematic (potentially), bulky, just another

item to break." A different person deemed that it was likely just another, "Overpriced childproofing item."

However, most of the participants who rented their homes seemed to think that the Blind Winder may reduce the risk of a safety hazard. Several comments were made including: "I think it is a good device, easy to use, and safe for kids," and "I would like to purchase one, I believe this is very effective, positive and safe to use." Another also mentioned that they preferred this one over the others as it is "more convenient." Only one participant in the renter group mentioned cost (see above).

Older Participants

None of the older participants indicated that they had seen or purchased/used a Blind Winder before. One participant was very confused as to its function and requested clarification on how to operate it. Another person expressed a concern that someone with arthritis might have difficulty operating the device.

Cord Wrap

Figure 4-3. Participants' previous experience with the Cord Wrap
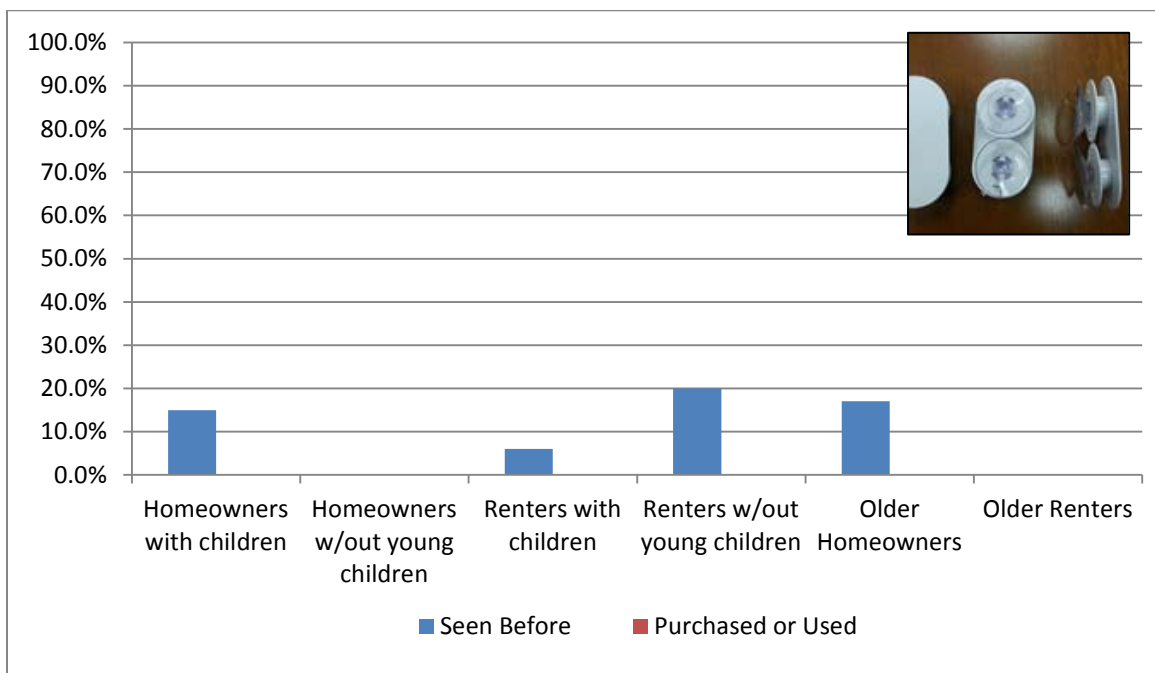
Twenty percent or less of the participants in each group reported having seen the Cord Wrap before, but none indicated that they had purchased or used one. Also, none of the homeowners without young children or the older renters reported having seen a Cord Wrap.

Homeowners

Overall, homeowners with children expressed a general dislike for the Cord Wrap. Several were concerned about the device's reliability, including "I am dubious that this would stay on (the) window" and "I tend to stay away from suction cups. They are unreliable and will lose suction." One person pointed out that the Cord Wrap "Would not work on older windows because panes are uneven." Additionally, this person wrote that this device is "Maybe good for a rental." Two participants wrote that they did not like device's appearance, it "Seems very large," and "would not want on display." One participant did note that it seemed to be easy to install, and can be temporary if needed.

Homeowners without young children made more comments about the device's overall appearance. Several noted that the device was very large. One wrote, "Too big [and] bulky. Suction cups seem like they might come off too easily," while another noted "cumbersome if the shade is down." Similar to homeowners with children, this group expressed concern that the suction cups would not hold, "Could come off if suction weakens." One positive comment was made, pointing out that the cord clip required "less winding" of the cord due to its large size, and "… no danger to [the] wall/frame" because it used suction cups to adhere to the window.

Renters

Overall, renters with children had negative opinions about the durability, reliability, appearance, ease of use, and safety of the Cord Wrap. Most participants were unhappy with the appearance of the Cord Wrap. One stated, "I would not buy that because it would make the window look bad. I like the window clean without anything on it." Renters also viewed this product mostly as unreliable because of the suction cups. One participant noted that "With temperature variation (lots of condensation, etc.) [it] seems like suction cups won't work well and will fall off," also calling it "bulky." One commented on the durability noting "I like the idea, but I don't prefer it, because it is mainly made from plastic. Plastic can be easily broken." In terms of safety, parents were concerned that this might look like a toy to children. One parent commented "[I] don't think it would be good to use with a 2 year old." In contrast to this, one participant said, "'Out of sight, out of mind for

kids," pointing out how this device is placed on a window and the window covering should cover it and prevent the child from noticing it. One commented that out of those seen so far, he liked it the best. He wrote, "I like this the best out of the three so far. It probably won't break as easily and won't take as long to wrap around."

Most of the renters without children (including older renters) noted that they would not use the Cord Wrap, or purchase it. However, one renter without children did say they would consider purchasing it if they had small children. Similar to the renters with children, renters without children were concerned about the suction cups and their durability. One wrote "I wonder if the suction cups work over time or if you need to reapply."

Older Participants

Older participants did not like this device, and they were extremely concerned that the suction cups would not adhere to the window. Additionally, children being attracted to this device was major concern, where participants wrote "Too tempting for children to play with," "Looks like a child's toy," and "… children can 'snap' off easily." Older participants noted no functional difference between the Cord Cleat and the Cord Wrap, but prefered the Cord Cleat. No older participant had desire to purchase.

Cord Clip

Figure 4-4.   Participants' previous experience with the Cord Clip
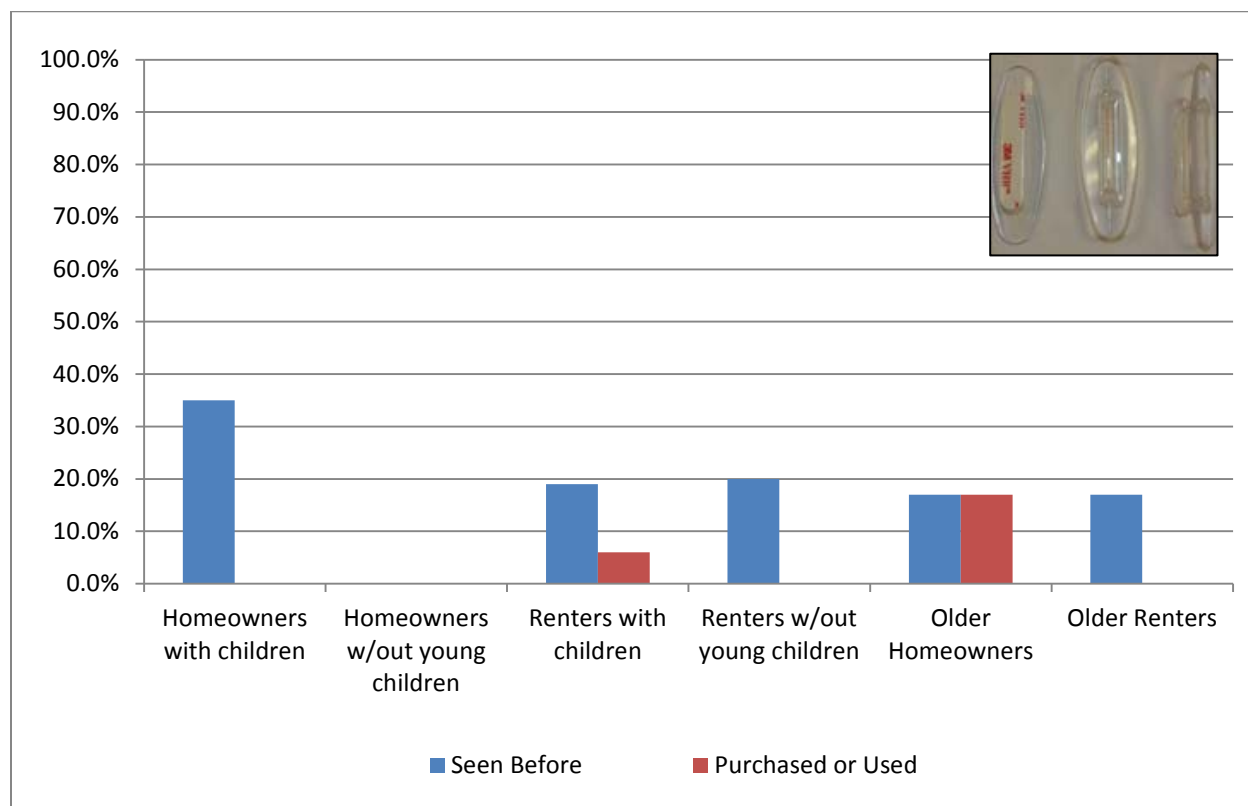
The Cord Clip appeared to be the safety device that participants as a whole were second-most familiar with; however, still less than 40% of the participants in any group indicated they had previous experience with this device. None of the homeowners without young children reported having seen this device.

Homeowners

Homeowners with children gave the Cord Clip mixed reviews. Some expressed more positive comments regarding the effectiveness, appearance, and safety of this device, while others were slightly more negative. For example one wrote, "I would purchase this product. My mom has them in her house and they look great." Another noted "This is less attractive than a cleat." In terms of it's effectiveness, participants expressed mixed reviews include comments such as, "Looks a bit more secure than the Cord Wrap," and "The stripping (adhesive) could fail and the cord would loosen." One parent wrote "If purchasing due to child safety concerns, I would worry about

strength!" Another problem that was mentioned by homeowners with children is that this device could take off wall paint.

Homeowners without children had a more positive opinion of the Cord Clip. They seemed to like its overall size. While these participants seemed to like the device, they also pointed out that they "… would not like wrapping the cord every time" and "… it gets tiring winding the cord around and around." One of the homeowners without children wrote that they did purchase this device, but ended up not using it. A different participant felt that, "One positive note is that this device does not require drilling holes into the window frame or wall."

Renters

While renters with children felt that the Cord Clip would be easy to install, they noted several problems with this device, such as its durability and potential for children to easily remove from the frame or the wall. Participants commented, "don't like the Cord Clip because the adhesive may come loose…kids can also pull it off," and "[The] sticky attachment won't survive kids. I prefer the cleat or a DIY cord cleat." Another wrote, "I think the Cord Clip is fragile and can be easily taken off. I do not think it can last for a long time."

Most of the renters without children made similar comments regarding its durability, agreeing that it wouldn't last long. One wrote, "What if the adhesive fades and the device falls?" Another noted, "Do not like adhesive version. Too risky it may loose stickiness and fall off." Participants in this group also commented on the problem of the adhesive stripping paint off the walls. In general, they did not seem to really like this device, although they expressed less negativity towards it than towards the Cord Wrap.

Older Participants

Older participants compared the Cord Clip to the Cord Cleat, commenting that "[the Cord Clip] could be useful, but not any better than the cleat." Like the other groups, older participants were concerned about the adhesive stripping paint off the wall. However, one participant really liked that the Cord Clip does not require drilling, commenting that it is "… nice because no holes in molding."

<u>Willingness to Purchase</u>

A few participants noted the difference between liking something and wanting to purchase it. Participants often saw the utility in the different aftermarket safety devices, but not many expressed an interest in purchasing one. Several participants felt that the current methods employed in their homes proved effective, and they did not see the value or need to spend money. One person said, "Tying up the cords is working. So am I going to go out to the store and get any of these devices? Probably not, just because I have never had any issues."

In general, most participants favored the Cord Cleat over the other safety devices demonstrated. Participants felt the Cord Cleat was the most secure and had the least chance of failure. However, there was some concern with having to drill holes in the walls, especially from renters. In addition to cost, functionality, and installation requirements, other factors considered included:

- Whether the intended safety device may unintentionally introduce a safety hazard or attract children to play with it,

- Ease of use,

- Effectiveness if not used 100% of the time,

- Aesthetics,

- Potential to damage the wall or window covering,

- Perceived durability of the product, and

- Whether or not their children/children who visit have shown interest in the window coverings.

4.1.8   Behavioral Patterns of Children (under the age of 5)

4.1.8.1   Leaving a Child under Age 5 Unsupervised

All participants were asked to share some common situations in which they felt comfortable leaving a child under age five in a room unsupervised by an adult. Overall, responses varied. People routinely said: while they were cooking; if the child was napping; while they shower; if there is an older child present to look after a younger child; if the child was occupied by a TV show, movie, or a

tablet; and if the child was in the playroom. Some participants said it is dependent on the child. One participant explained, "With my son, who is four, I leave him alone in his room playing all the time and did so when he was younger. However, my daughter, she is two and I don't trust her. She is more mischievous than he was."

However, not all participants indicated they felt comfortable leaving a child alone. Some participants seemed hesitant and said they try to never leave children unsupervised. It is important to note that older adults as well as homeowners and renters without young children were more likely to be uncomfortable leaving child visitors in a room unsupervised for a period of time.

Some participants thought people's decisions might be more related to experience. That is, a first time or new parents might be less likely to leave a child unsupervised. One participant said, "In general first time parents are more cautious and then by the second child less cautious." This sentiment was echoed in several of the sessions. Another explained it by saying, "My experience is the first child you never leave alone, the second child is left alone on occasion, and the third child or youngest can do whatever he/she wants." Another perspective was that the decision to leave a child unsupervised is dependent on the room.

Participants seemed to think certain rooms were safer than others for children. That is, the kitchen, basement, and bathroom were all cited as more dangerous rooms because the child can easily access water, fire, and other items and products that might result in a serious or fatal injury. Bedrooms, playrooms, and living rooms were seen as less hazardous; and therefore, participants were more likely to allow the child access to these rooms unsupervised.

When asked how long participants would feel comfortable leaving a child under 5 in a room unsupervised before checking in, again participant responses varied. For those who were able to cite a specific time, most suggested less than 10 minutes. Again, participants felt that the age and maturity of the child, the presence of older siblings, the distance away, etc. could all impact the decision as to when to check on the child. Overwhelmingly, participants agreed that you should always check in on the child when, "… it goes quiet, you check."

4.1.8.2   Unique Behavioral Traits for Children under Age 5

Participants were asked to describe what is unique about a child's development or behavior at this age (under age 5). Participants described this being the developmental stage where children are, "finding their limits", and are naturally more inquisitive. Another person described it as,

"Developing a sense of independence at that age. I can do it. I can do it myself." One person described children as, "little sponges" and further elaborated that they likely to imitate and take in all that is around them. Overall, participants seemed to agree that during this stage of development, children play with and explore everyday objects. Some of the everyday things mentioned that children are attracted to included: unplugging the magnetic power cord from the computer, playing in boxes, push and pulling at the baby gate, turning the electric fireplace on and off, removing the outlet covers from electrical sockets, opening cabinet doors, etc.

4.1.8.3   Children's Interest in Window Coverings

Participant responses varied when asked if they ever noticed their own or visiting children playing with the window coverings. Some parents said "yes", while other parents indicated that they don't recall their children showing any interest. Of those parents who did notice their children playing with the window coverings, they typically cited the following scenarios:

- Vertical blinds attract children because of the noise they make when they move.

- Children use the window coverings to hide behind.

- Children like to raise and lower the blinds and shades constantly, sometimes to look outside and other times just to watch the window coverings open and close.

- Children make believe that the window cord is a necklace, leash, etc.

One participant said, "My kids go right for the string, even if it is tucked out of sight." She also indicated that her kids are resourceful and will go get a chair so that they can access the cord.

A majority of the participants who did not have young children living with them, but had children that might visit on occasion, did not seem to recall them showing an interest in the window coverings. One participant described her situation by saying, "Grandma's house has so much going on … the kids don't pay attention to the blinds." Others seemed to agree with that sentiment, stating that their homes are somewhat novel to child visitors, and the window coverings don't seem to be something that interests the children. It was also noted that often these visits are for a finite period of time and the time is usually spent all together, and therefore the children are not unsupervised.

When asked if they ever discussed window covering safety with their own or visiting children, a majority of the participants said they did not. Some of the participants, who spoke to their children

about the dangers of playing with the window coverings, admitted that telling children not to touch does not always work. A few participants thought that when you tell a child under the age of five "no" it only entices the child to engage in the prohibited activity. In addition, participants felt that sometimes it is best to avoid the topic if the child has not shown an interest. One participant explained, "Generally I stay away from those talks in advance, because once my daughter knows that it's something I don't want her to play with, she will fixate on it." Another person mentioned that she specifically did not address the length of her cords by keeping them out of reach of her children, because it "is her parenting style to educate on the safety hazard rather than teach to avoid." As an alternative, other participants said they may try to divert the child's attention in order to get the child to stop playing with the window covering.

Some participants felt that at that age children do not comprehend danger and it is difficult to explain the concept of safety. Instead of specifically addressing safety, some participants just tell their children not to touch. One person said, "I just straight up asked my daughter, do you want to die, and she said no, so I said 'then don't play with it'".

4.1.8.4   Other Safety Precautions Taken By Participants in Their Homes

When asked about other safety precautions they have taken relative to children, participants with children living in the home tended to list: outlet covers, cabinet locks, baby gates, and door knob covers. Interestingly, one participant said, "these items are all only effective until the child watches you and learns how to defeat it." This same participant indicated that he hides the wands used with window blinds from his children and also tries not to use the cord when they are around.

Older participants indicated that often they will prepare their home for visits with children by: stocking the fridge, putting away breakable items, putting away prescriptions, bringing out toys, and clearing their schedule. Several said they may tie up their cords, or those with cord cleats said they may be more inclined to use them when children are visiting.

4.2   Hands- On Product Exposure

The following section describes the findings of the hands-on task portion of the focus group session.

4.2.1 Video Coding

While the sample size of participants was relatively small, there are a few general patterns in terms of how participants interacted with the window coverings and aftermarket devices. Table 4-2 shows the average number of minutes spent on each window covering, separated out by demographic group. Note only homeowners and renters with children worked with all of the window covering conditions, all other demographic groups only worked with subsets. That is, not every demographic group worked with every product pairing.

In general, participants spent between 4.9 and 10.8 minutes working with the window coverings. Participants spent less time working with the vertical blinds (A1) and roman shades (A3 and B4) relative to the other window coverings. Given that participants did not have to install any components of the window covering or work with any aftermarket devices for these two stations, this is expected. While most participants spent close to the assigned time (9 minutes) to work with each window covering, elderly renters spent less time than any other demographic group when working with the various window coverings. Note, while all participants were asked to spend only 9 minutes with a window covering, if participant was about to finish, they were given extra time.

Table 4-2.   Average number of minutes spent on each window covering

	A1: Vertical Blind	A2: Cellular w/ Tensioner	A3: Roman Shade w/Cleat	A4: Alumn. Horiz. w/ Wind-up	B1: Alumn. Horiz. w/Winder	B2: Roller Shade w/ Tensioner	B3: Faux Wood Horiz. w/ Brkwy	B4: Bamboo Roman Shade w/Cleat
Homeowners w/children	6.93	9.34	7.59	8.90	9.70	8.29	8.76	6.84
Renters w/ children	6.73	9.04	7.40	9.22	8.38	7.91	8.52	7.35
Homeowners w/out children	6.38	8.27	7.43	8.98				
Renters w/out children					9.58	10.84	8.14	8.47
Older Homeowners					9.41	9.23	7.68	6.89
Older Renters	5.15	6.63	4.87	8.26				

Table 4-3 shows the average amount of time (in seconds) each participant took to read the installation/user manual for each window covering. Participants took anywhere from 30 seconds to

slightly over two minutes to review the installation manuals. If participants read the manual more than once during a task, the sum of time spent reading the manual was used in the calculation. This measure includes both time spent looking at a window covering's installation manual, and if applicable for that particular window covering, the time spent reading a safety device's manual/instructions. This does not include the time the participant spent reading the hands-on task instructions for working with the window covering (see Appendix B).

It is important to note that some of the manuals were more complex and detailed than others and this might be why certain ones took longer to review. In general, participants spent the least amount of time looking at the manuals for vertical blinds and roman shades relative to the other window coverings. This could be correlated with the activity associated with the window covering. Overall the window coverings that did not have an associated task or had a relatively simple activity (e.g. use the pre-installed cord cleat) were also the window coverings where the participant spent the least amount of time. Participants seemed to spend a lot of time reviewing the manual for the Aluminum Horizontal Blind that was paired with the Winder aftermarket safety device. During the follow-up discussion several participants noted that the instructions for the Winder we unclear, and this may be why more time was spent reviewing the manual for Window Covering B1.

Table 4-3.   Average number of seconds spent reading the manual

	A1: Vertical Blind	A2: Cellular w/ Tensioner	A3: Roman Shade w/ Cleat	A4: Alumn. Horiz. w/ Wind-up	B1: Alumn. Horiz. w/ Winder	B2: Roller Shade w/ Tensioner	B3: Faux Wood Horiz. w/ Brkwy	B4: Bamboo Roman Shade w/ Cleat
Homeowners w/children	67.93	68.36	42.03	88.68	74.57	37.15	112.76	60.11
Renters w/ children	52.69	77.41	44.41	82.10	93.19	52.10	53.34	53.01
Homeowners w/o children	33.76	75.71	41.84	84.23				
Renters w/o children					95.97	96.49	69.61	71.33
Older Homeowners					189.02	82.87	80.29	45.28
Older Renters	51.39	76.70	21.76	38.78				

Figures 4-5 (Set A) and Figure 4-6 (Set B) examine the proportion of correct installs for the different window covering types and aftermarket devices. The proportion of correct installs of tensioner devices, aftermarket safety devices (Cord Wind-Up and Cord Winder), and interactions with breakaway devices was calculated by dividing the number of successful attempts per group by the

number of total attempts, both successful and unsuccessful. It is important to note that some participants simply did not attempt the activities, even though all were instructed to do so. Participants who did not attempt were not coded as incorrect installs, but as missing and not included in calculations. Figures 4-5 and 4-6 only reflect the proportion of actual attempts that were correct per the manufacture's specifications.

For participants who interacted with Set A window coverings, across the different demographic groups, participants had greater success in installing the tensioner relative to the aftermarket device (Wind-Up). However, despite having greater success in comparison to other devices, even for the tensioner device failures were frequent. While homeowners without young children were most likely to install the tensioner correctly (the cord taut and the device compressed for ease of motion), homeowners with children were most likely to successfully install the Wind-up device. None of the older renters successfully installed the Cord Wind-up.

Figure 4-5.   Proportion of correct installations of safety devices for window covering Set A
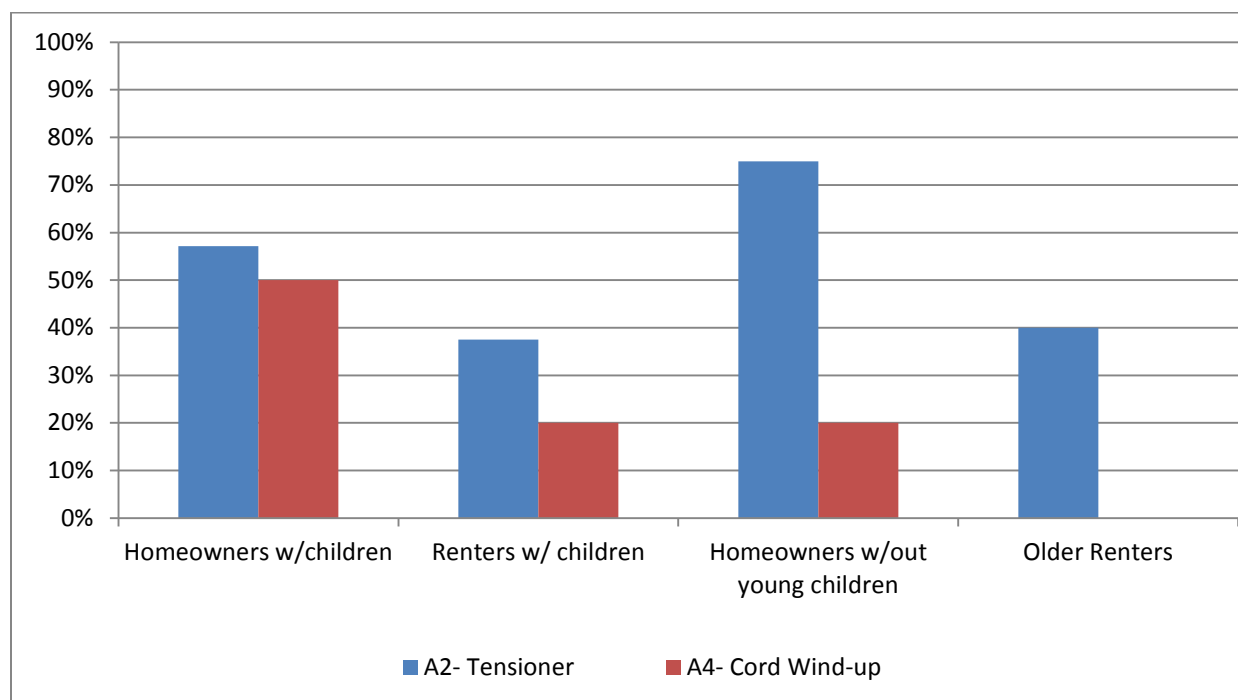
For participants interacting with Set B of window coverings, a greater proportion of participants across the different demographic groupings were able to successfully install the Cord Winder relative to the tensioner (see Figure 4-6). This pattern is different from what was observed in Set A where a fewer participants were able to correctly install the tensioner relative to the aftermarket device. With

the Set B tensioner, no group had more than 40% of the participants install the device according to the manufacture's installation instructions.

Figure 4-6.   Proportion of correct installations of safety devices for window covering Set B
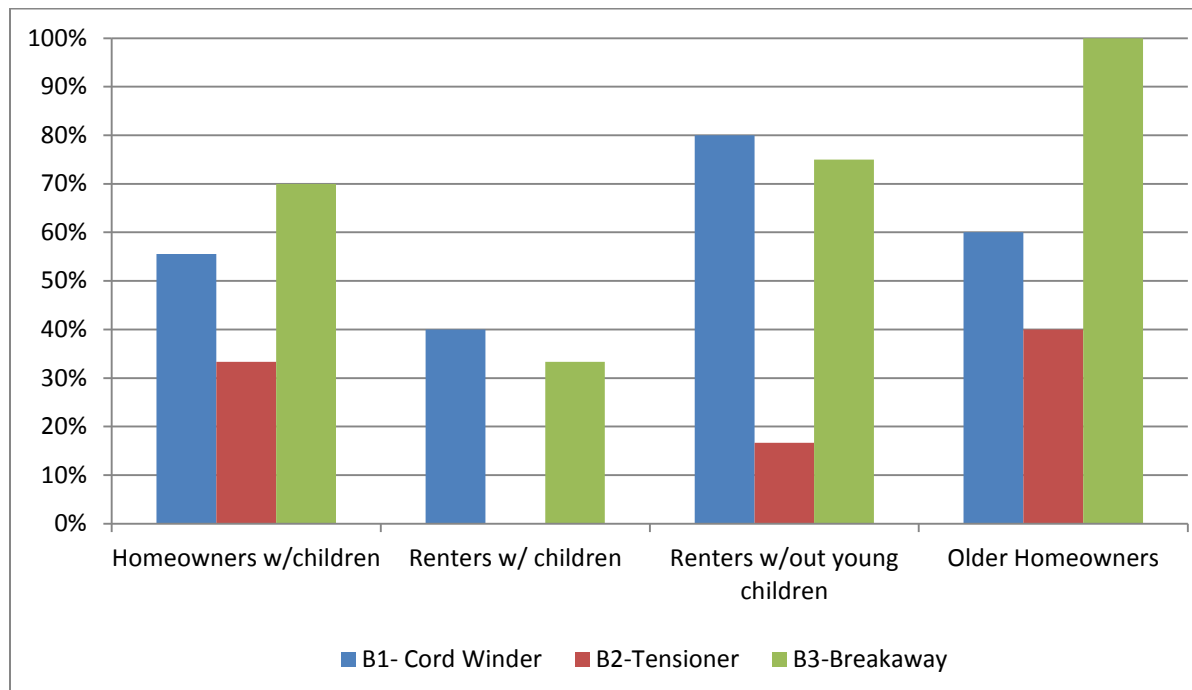
It is important to note that there were two different tensioner designs tested (see Figure 4-7 for an image of the two tensioners tested) in Set A and Set B, which may have contributed to participants' difficult in operating or installing the devices.

Figure 4-7.   **Tension devices installed by participants**

Set A Tensioner   **Set B Tensioner**

In comparison, the Set B tensioner required the participant to fully depress the spring during the installation for it to be installed properly, whereas the Set A tensioner required less compression of the spring mechanism during the installation. Also interesting, none of the renters with children that worked with window coverings Set B were able to correctly install the tension device for the Roller Shade (Window Covering B2). Table 4-4 provides a comparison of the percentage of correct installs by group.

Table 4-4.   **Percentage of correct tension device installs by demographic grouping**

	A2- Tensioner	B2-Tensioner
Homeowners w/children	57%	33%
Renters w/children	38%	0%
Homeowners w/out young children	75%	–
Renters w/out young children	–	17%
Older Homeowners	–	40%
Older Renters	40%	–

Participants working with Set B were also asked to correctly identify and test out the breakaway device on the faux wood horizontal blinds. Successfully testing out the breakaway feature meant that the participant was able to identify the breakaway portion of the cord and apply enough pressure such that the continuous loop would break open as intended. Attempting to test out the breakaway varied across demographic groups. Only half of the older homeowners attempted (three of six attempted) to test the breakaway device, of those who attempted all were successful. Thirty-three

percent of renters with children that attempted (three of five participants attempted) the task were able to correctly complete the task. Typical failures included not putting enough pressure on the breakaway device and incorrectly identifying a different part of the cord as the breakaway device. It is also important to note that the breakaway device had the most number of skipped attempts for all groups that were asked to test it. During the follow-up discussion, participants stated that the instructions were unclear regarding the function or location of the breakaway portion of the cord. Note the instructions for the shade had an image of the breakaway portion of the cord.

Several participants did not actually complete the tasks they were assigned to do at the different stations. Table 4-5 is a count of participants who did not attempt the activity that they were instructed to do. This could have been because they ran out of time, did not read the instructions carefully, or started reading the instructions, but quickly deemed it was too difficult to attempt. Note that three older homeowners did not attempt the breakaway, perhaps explaining why 100% of those who did attempt it did so correctly.

Table 4-5.   Count of participants who did not attempt activity

	A2: Tensioner	A4: Wind-Up	B1: Winder	B2: Tensioner	B3: Breakaway
Homeowners w/children	1 (of 8)				
Renters w/children	1 (of 9)	1 (of 11)			2 (of 5)
Homeowners w/out young children					
Renters w/out young children					1 (of 5)
Older Homeowners			1 (of 6)		3 (of 6)
Older Renters	1 (of 6)	1 (of 6)			

Note: Video was lost for Window Coverings A1 and A2 for two of the Renters with children and for A1, A2, A3, and A4 for two of the Homeowners with children.

The amount of time spent attempting to install aftermarket devices, tensioners, or interacting with the breakaway device was measured by video coders. Figure 4-8 shows the average amount time (in seconds) each demographic group took when attempting to install or break apart the breakaway device. Note, not every demographic group worked with every product. Overall, participants took the most time to install the tensioners and the least amount of time working with the Cord Winder and the breakaway device. However, for several demographic groups, the time spent on the Cord Wind-Up aftermarket device was comparable to the time spent on the tensioner. Interestingly, homeowners without children spent more time on the Cord Wind-up than on the tensioner. As mentioned earlier, it is important to note that while both tensioners proved troublesome for participants, the Set B tensioner seemed more difficult for participants to install and took more time to install than the Set A tension device.

Figure 4-8.   Average time spent on task
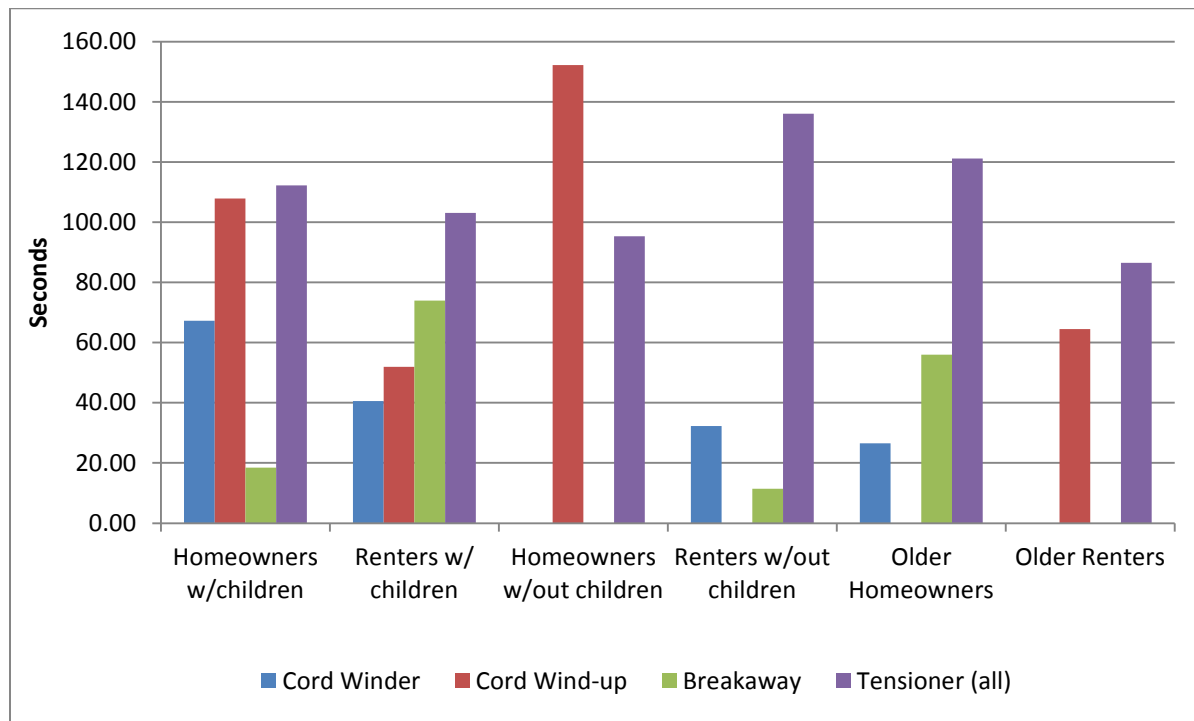
Confusion & Frustration

Video coders flagged events that indicated confusion or frustration on the part of the participant. As stated in Section 3.2 of this report, markers were placed when a participant either expressed frustration or showed nonverbal signs of frustration. Similarly, confusion markers were placed when a participant expressed uncertainty either audibly or visibly. Figures 4-9, 4-10, 4-11, and 4-12 display the average number of events, per person, in each demographic group, for each set of window coverings. Examples of confusion seen in the video clips include:

- A participant saying, "It's supposed to break apart, I don't really know how."

- Video coder observation that the participant is trying to attach the aftermarket safety device to the window frame when it is supposed to hang freely in the cord.

- Video coder observation that the participant is having trouble finding the cord.

- A participant stating, "Oh, you lost me!"

Overall, participants experienced most confusion when working with the aluminum blinds (A4 and B1) and two of the aftermarket devices (Cord Wind-Up and Cord Winder) that were paired with them. This may be due to the fact that a majority of the participants were not familiar with the

aftermarket devices they were instructed to test. Older renters and homeowners without children that worked with Set A window coverings showed fewer signs of confusion than other groups. However, it is important to note that these two groups, in general, spent less time working with the window coverings than any other group. Therefore, variation in "Confusion" markers between groups may not be indicative of an actual level of understanding. Some groupings simply may be better at verbalizing their thoughts and opinions than others.

Figure 4-9. Average number of "confusion" events per person for Set A
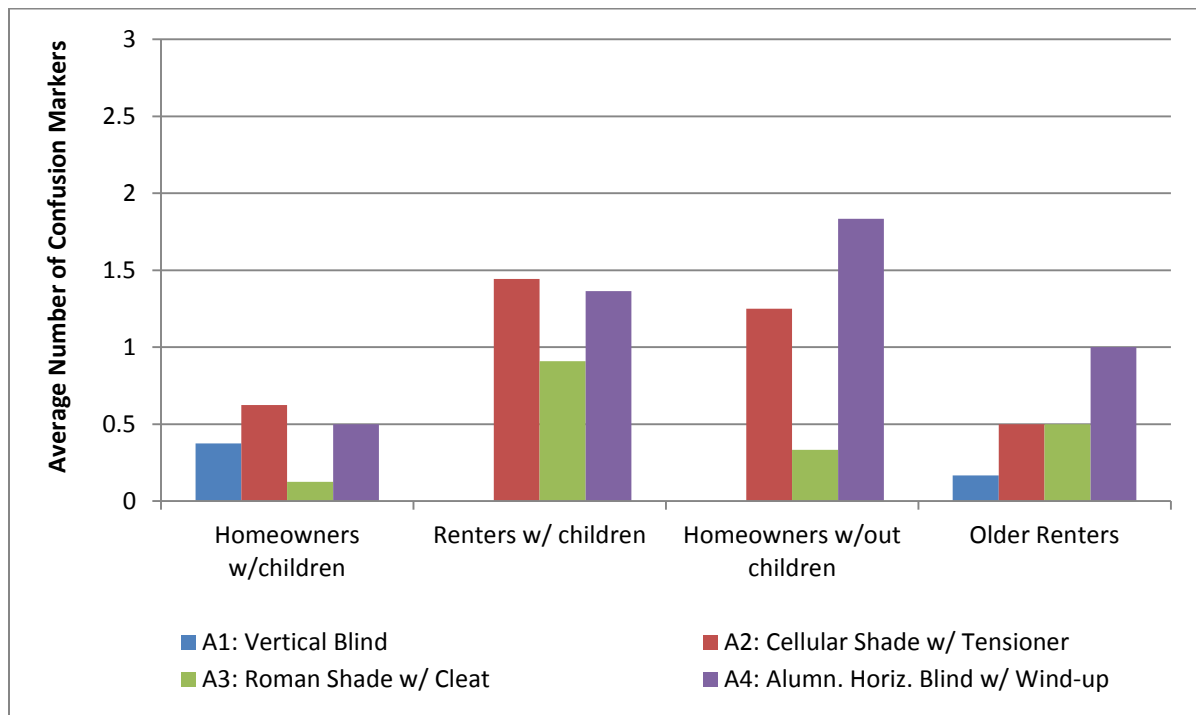
Figure 4-10.   Average number of "confusion" events per person for Set B
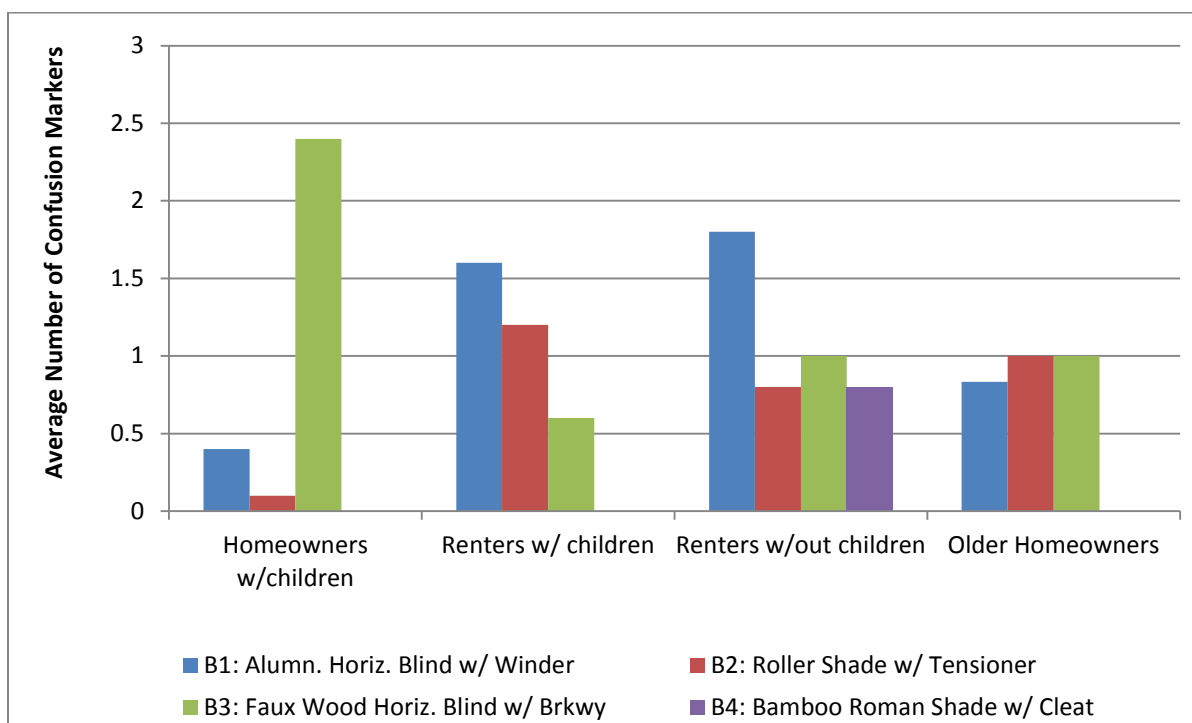
"Frustration" events did not vary greatly between the demographic groups or the different window covering. Note, older homeowners did experience a greater degree of frustration when working with the roller shade and tensioner (B4). Based on the follow-up discussion, this frustration may be attributed to difficulty when trying to install the tensioner. Participants in the older homeowner group specifically cited issues with arthritis and having a difficult time when attempting to fully compress the spring in the tension device. Examples of frustration seen in the video clips include:

■ Video coder observation of the participant throwing their hands up and saying "I can't get it to work!"

■ Participant saying, "Not sure how to do this, to me it's a little frustrating."

■ Video coder observation of a participant frequently sighing and showing signs of exasperation.

■ Participant exclaiming, "Oh my god, this is so complicated!"

Figure 4-11. Average number of "frustration" events per person for Set A
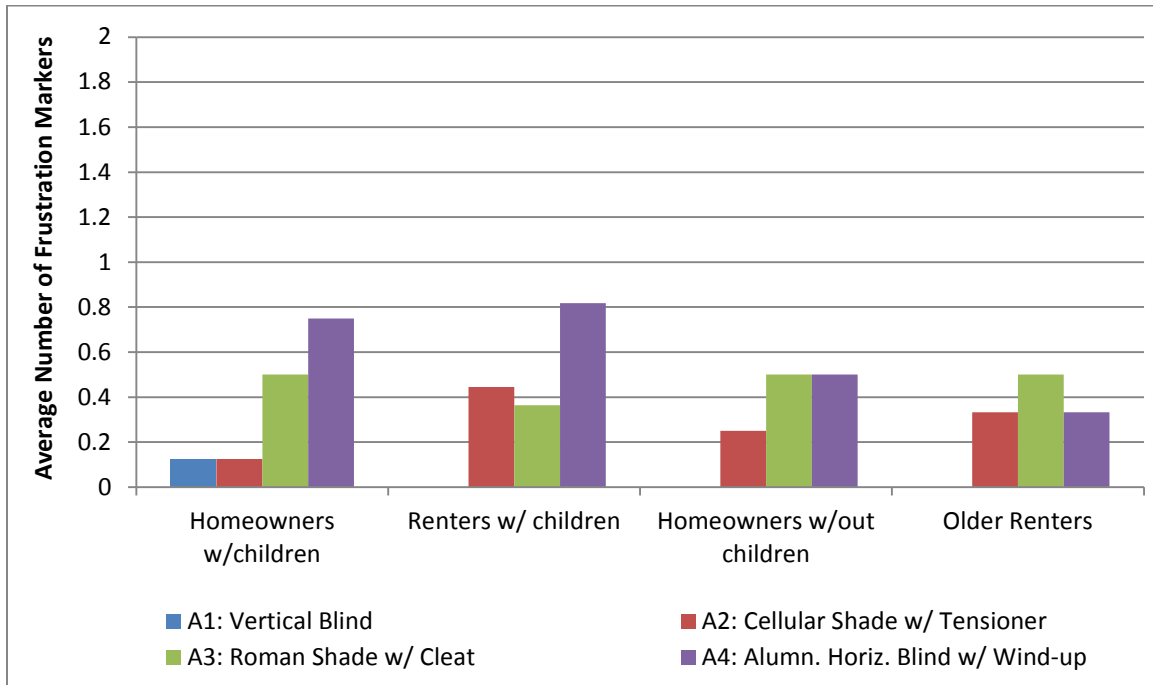
Figure 4-12. Average number of "frustration" events per person for Set B
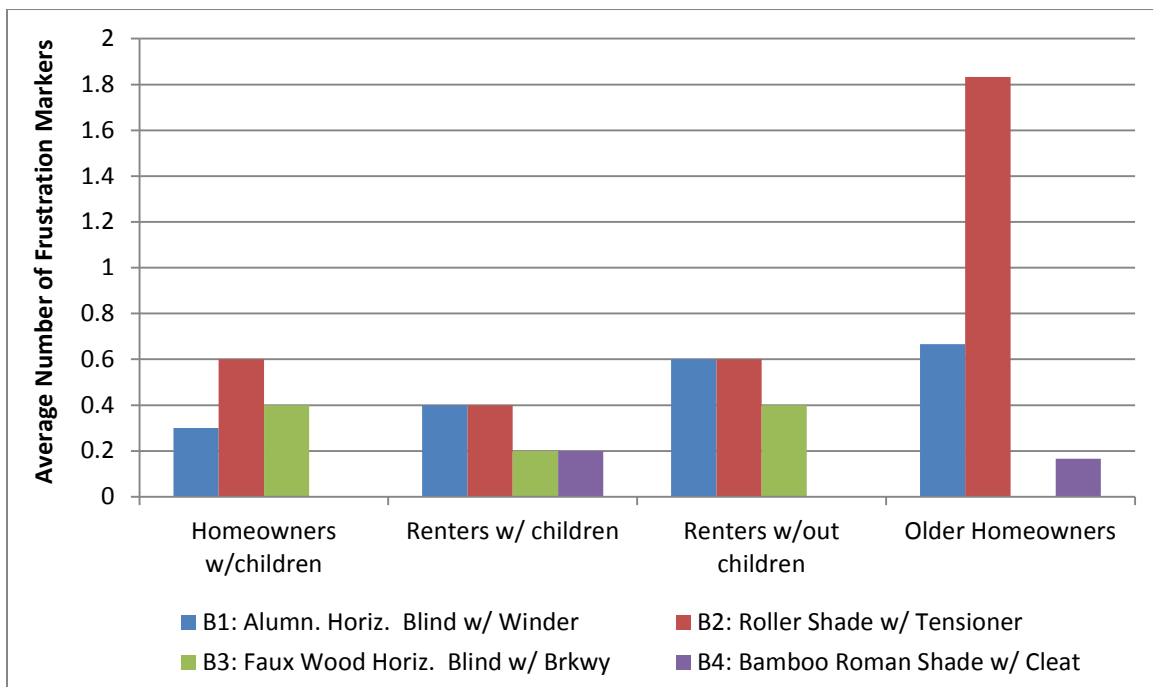
Video coders also tracked whether participants attempted to use the cord cleat paired with the roman shades. All participants attempted the cord cleat, and for the most part, were successful. While comments regarding the cord cleats were read and summarized, nothing new was said that had not been addressed during the initial discussions.

4.2.2 Participant Comments & Responses to Questions about their Experience with the Window Coverings

During the hands-on task video coders identified and transcribed relevant or interesting comments made by participants. They also documented verbatim the participant responses to the different questions asked for each window covering. The following summarizes some of the more notable comments, overall participant opinion of the various window coverings, and includes a synopsis of the participant responses to the different questions.

A1: Vertical Blind

Although the vertical blind is relatively common, especially over sliding doors, it was relatively unpopular with a number of participants. Most participants complained that the various components break easily. Participants mentioned that the slats fall off, the wand often breaks, and the mechanism that opens the slats breaks leaving the blinds useless. Several participants noted significant safety concerns related to children. Participants felt that children are attracted to the noise the blinds make as they move and are often tempted to pull or hit them as well as run through them. One participant said "they are not as durable as they should be as far as kids are concerned." A few participants seemed to think the blades, with their sharp corners, are more of a hazard than the cords.

The vertical blind used in the focus group had two tension devices, and both were preinstalled for participants. Therefore participants only were responsible for testing out the tension device functionality, not actually installing the tensioner as they were asked to do for another blind. When responding to the questions, participants had a positive reaction to the tension devices for the vertical blind, with one person saying "I like that these cords have something to go into." However, some questioned whether the tensioner made the blind completely safe, noting that a child could still get their hand or arm caught in the loop. One renter with a young child questioned "I don't know if we want to be punching holes in our window sill with this or do we?" perhaps reluctant to make permanent modifications to a rented home. Multiple participants thought that the noise the metal

chain made would attract young children to the blind, with one pointing out "noise has a way of attracting children."

A2: Honeycomb/Cellular Shade with Tensioner

Most participants thought the honeycomb shade was easy to use, quiet, and operated smoothly. Installing the tensioner was met with mixed reactions. Several participants thought that having a drill would make the task easier, while many participants were unsure if the device was installed correctly. One reason for the mixed reactions may have been that the participants simply did not have enough time to read the directions carefully. They may have taken more time in their own homes to make sure the device was installed properly. For example, one participant evaluated their work and declared "I did it wrong, I should have read the instructions." Based on the review of the video footage it was noted that participants often did not install the tensioner completely by fully depressing the spring. The spring needed to be compressed in order for the tensioner to function properly.

While tensioners are designed to make operating window coverings easier, multiple participants stated that it was more difficult to operate the shade after they installed the tensioner than before. Again, this may be because they did not install the device correctly. Older renters in particular stated that they had a difficult time installing the tensioner, with one participant pointing out "…I have a disability in my right hand…" Because the shades were soft, many participants perceived them as safe, with one saying there were not "many safety issues other than a paper cut." However, one participant noted that the way the shade folded up and down like an accordion (a "magic trick") may attract a child's curiosity, whereas others saw the folds as excellent hiding spots for children to put their toys and other small objects.

A3: Roman Shade with Cord Cleat

One of the biggest complaints about the roman shade was that the cord for operating the shade was behind the shade itself, making it difficult to locate as well as open and close. "Very cumbersome to have to go in the back" was a common complaint. Multiple participants were skeptical of how safe the shades really were, noting that there were hidden loops on the back of the shade when it was open. One older renter stated "I could see children hiding behind the shade and pulling out the loop and putting their head in the loop. Very dangerous because you can't see what's going on behind the shade."

Feelings regarding the cord cleat were mixed. Some liked how easy it was to use the cord cleat and how it was a sturdy safety device. Others felt the cleat was ugly and thought they were unlikely to wrap the cord every single time they used their blind or shade. One participant stated "I don't think I would realistically use the cleat in my room every single time I'm bringing the blinds up or back down…" while another said "I guess if you put the cleat on… it should really go up a little higher."

A4: Aluminum Horizontal Blind with Cord Wind-up

While the aluminum blinds were considered easy to use, many participants explained that they simply "just don't like these blinds." Some said they looked cheap, or that the metallic color would attract children (and pets). Several participants noted that the sound aluminum blinds make could potentially attract young children. One of the older renters pointed out that "children like sound. It is overly exposed. Its metal, they bend very easily, I also think a child could be cut [by the slats]."

For the most part, the Cord Wind-up was met with confusion, with many participants not understanding its function or how it was supposed to work. One participant stated that while "it's a deterrent to deter kids from playing with blind cords…I think it almost makes it more noticeable and it opens up really easily and unintentionally." Other participants agreed and did not like how bulky the Wind-up was, stating that it may actually draw a child's attention.

When trying to install the Wind-Up one participant noted "this end doesn't stay in place, which I don't like." Other participants were worried that it would take "too much work to make it effective," indicating that it was cumbersome to take it off and put it on each time they wanted to adjust the blind. Others thought that it did not seem well made and had the potential to snap open easily, thus defeating the purpose. In general participants did not seem willing to use a product like the Wind-up every time they adjusted their window coverings. In addition, several participants remarked that the instructions for this device were too vague.

Conversely, a homeowner with a young child had actually purchased a Wind-up and had a different perspective, saying they were "super easy to use… It just keeps these cords out of the reach of children. It stops the tangling. It stops them from getting their little necks and arms stuck in the cords or pulling on them. The cord wind up for us has been 100% effective, nothing's happened."

B1: Aluminum Horizontal Blind with Cord Winder

Participants were not particularly confused regarding the Cord Winder, but it still was not a popular device. Feedback regarding the Cord Winder was mixed. One renter without a young child complained there was "no true latch or lock to connect this Cord Winder with the cable [cord], so it could easily fall out and then you have the problem with the dangling cable [cord] again." Some thought the Cord Winder was "nice" but more thought that it looked "flimsy" and would come off the cords too easily, and had the potential become a hazard to children if they played with it. A few participants thought that the winder could actually do more harm than good, attracting attention from children and being one more thing that could break.

 A few participants seemed confused about how to use it; several mentioned that they thought it was supposed to be mounted to the frame or wall. Those who used it properly thought it looked "tacky", hanging suspended on the cord. Several participants noted that they would prefer a wand/rod over a set of cords, both for safety reasons and for aesthetics. One participant (an older homeowner) thought "… anything that keeps the cord up higher is effective."

B2: Roller Shade with Tensioner

This shade was largely classified as "smooth" and "easy to operate." There was some concern over whether the chain used to raise and lower the shade would break, but a few participants noted that they liked the material.   A few participants expressed annoyance at the way the beads would get stuck in the tensioner when trying to operate it. It is important to note that the beads would only get caught in the tensioner if the device was not installed properly, but participants seemed unaware that this was the case. One person said "I think it is a good idea to have this tension device," but others thought that the shade was more difficult to operate once the device was installed, also suggesting that the tensioner was not installed correctly.

Reactions to installing the tensioner were mixed. For example, one participant thought it was easy, but later admitted that actually drilling the holes would make the process more difficult. Many participants did not even view the tensioner as a safety device, and wondered whether it was even necessary. Multiple participants thought that the cord looked like a necklace and would attract young children. As one homeowner with a young child said "my daughter loves necklaces and she might see this as a necklace, stick her head in it, and that would be not good."

B3: Faux Wood Horizontal Blind with Breakaway

These horizontal blinds were relatively popular from an aesthetics perspective, but several participants noted that the cord was too long. One participant noted "[the cord] is hanging low and I've got no way to tie it up." A majority of those who were able to figure out how the breakaway worked thought that the device was a good idea, although a few pointed out that it seemed like something a child would want to play with and could potentially choke on. Others seemed frustrated by the fact that the breakaway device would, in their opinion, open too easily and also that it was difficult to close or "re-set". Another person pointed out that the breakaway could also be dangerous, as it was essentially making a continuous loop out of two cords.

One older homeowner correctly assumed "The purpose of the breakaway is if a child gets their head caught in here. If a child's head get caught in here and they struggle then it would just come right apart." One participant observed that even with the breakaway, children would still be exposed to two long cords that could be wrapped around the neck. However, one homeowner with a young child was able to visualize possible modifications, observing "I could cut the string and make it shorter and then tie the knot up here and have this higher. That would be awesome."

B4: Roman Shade with Cord Cleat

Participants did not like the bamboo roman shade, saying that it was too bulky, heavy and did not let in enough light. Reactions to the cleat were mixed. One homeowner with a young child liked that it was "Very easy to use the cleat." However, a renter with a young child said "It was easy but I don't like it. It was too much wrapping around," indicating that even with a cleat installed, people may not use it 100% of the time. Many noticed that the cord for this roman shade was very long and noted that not only was that a safety hazard, but it might draw children's attention as well. One renter without a young child noted "I can see kids wanting to play with this cable. It's long and kids may like pulling on it. Trying to play jump rope or something silly like that." Several participants thought that shortening the cords would make it safer for children. One person noted that this shade seemed particularly dangerous because it not only had a long cord, but it was also very heavy.

4.3 Follow-Up Discussion

The following summarizes the discussion that took place following the hands-on task where participants were asked to elaborate on their experience and also provide insight into which window coverings and safety devices they preferred and which ones they did not like. Participants were also asked to elaborate on any safety concerns they may have and whether or not they would be willing to purchase and/or use any of the devices they worked with.

4.3.1 Reaction to Installation Manuals

Participants admitted that after reviewing the manuals, they were unaware that safety information was presented in most of them. Participants felt that some of the manuals did a better job than others about calling attention to the safety concerns. These manuals did so by presenting the safety information upfront, and not embedding it in the instructions. Similar opinions were shared across the different sessions. One person pointed out that people tend to pay more attention to instructions in the beginning, and lose concentration or focus towards the end. In one participant's words, "Safety concerns and the solutions to the problem should be addressed on the very first page of the manual before the consumer gets frustrated with the instructions and stops reading."

In general the participants thought the instruction manuals could be improved in the following ways:

- Decrease the amount of text and increase the number of good illustrations or graphics. A lot of participants referred to Ikea instructional manuals as a good example of a guide they would *actually* read because it is more user-friendly.

- Devote an entire page to safety in the instructions.

- All steps should be numbered.

4.3.2 Perceived Barriers to Installation and Use of Safety Devices

Participants were asked to elaborate on the different tasks they were asked to perform when working with the window coverings. Below is a summary of their interpretation of the activities they were to engage in and the products they tested out.

Tensioner

About half of the participants did not notice a change in ease of use on the shades or blinds with tension devices that required installation, indicating the window covering was fully operational regardless of the presence of a tensioner. The other half seemed to think the shade was more difficult to operate after the device was installed, likely because the tensioner was not installed properly. A few participants thought they may have installed the tensioner too high because the cord was not taut and instead was "bulging."

Some participants thought that the installation instructions could be improved; they were unclear on how the tensioner served as a safety device. One participant pointed out that the beaded cord running through the tension device makes a noise and could attract children to play with it. One of the older adults (age 66 and older) mentioned that the tension device might make it more difficult for people with arthritis to use the blind or shade. Overall participants were somewhat negative in their opinion of the tensioner.

Cord Wind-up

Participants also complained about the instructions for the Cord Wind-up, citing that they were very vague and included no text therefore making them difficult to understand. After the moderator demonstrated how the device works, one person said, "This would require seeing someone do it, and then you see how it's done. But in reading the instructions, I would not have come to this conclusion." Others complained that the device "popped" open when they were trying to use it. A different person thought it took too long. Others were concerned that it was ugly and somewhat bulky. One participant said that he had no trouble with it, but he also admitted that he had this device at home when his children were younger. In general perceptions of the Cord Wind-up were also negative. Participants thought it may also increase risk because children may see it as a toy.

Cord Winder

Perceptions of this device were not positive. While participants in general did not think it was difficult to install, they just did not seem to like it. Participants said things like, "… the cord winder thing was an absolute joke." One person said that it fell off several times when she was trying to use it and therefore it did not seem secure to her. A few participants thought that it might attract both cats and children since it dangles in the string. Others thought that the size of it made it a potential choking hazard. Additionally participants thought it would take too much time and therefore they would not be inclined to use it all the time.

Breakaway Device

Participants that understood the device's function seemed to think the concept of a breakaway device was great, but they were concerned that the breakaway they interacted with was flimsy. A few participants said the breakaway device opened when they were just raising and lowering the blind. As a result, these participants were turned off of the idea, citing that it would be cumbersome to reset or put it back together every time they used the blind. A few participants were unclear that the intended purpose of the breakaway was to break open and they had thought they broke the blind. Several other participants were unable to locate the breakaway portion of the cord and admitted they were unclear on the intended purpose of the device. Another person liked that it kept the strings organized.

Cord Cleat

One thing that a lot of participants mentioned was that they liked that the cleat was discrete and could be placed off to the side or inside the window frame so as not to draw attention to it. Also, people seemed to like the idea that it screwed in and therefore felt it was more secure. Despite having a more positive reaction overall than to the other devices, participants still focused on the fact that it might be tedious to unwrap and wrap each time they want to use the window covering. Several participants thought it was just as effective to tie the extra cord in a bow out of the reach of children.

4.3.3   Acceptance & Use of Safety Devices

In general participants were not very accepting of the safety devices that were presented during the session. People understood and appreciated the fact that they addressed safety, but did not necessarily see them all as reliable or easy to use. People admitted they liked the concept, but several differentiated that liking and being willing to purchase as two very different things. In general the Cord Cleat received the most positive reactions from all participants. Participants described it as straightforward and easy to use. Participants also seemed to prefer that it was sturdier since it would be installed in the window frame or in the drywall. Despite the fact that was well received, participants still admitted that they would be unlikely to use it all the time.

Two cordless window blind models (a horizontal blind and a cellular blind) were demonstrated for participants in each session. In general, most of the participants liked the cordless options and said they would be willing to purchase a cordless blind so long as the price was not

prohibitive. Participants tended to like the cordless faux wood horizontal blind better than the cordless honeycomb / cellular shade. Participants liked that the cordless horizontal blind has the ability to change the degree to which the panels are opened in order to get more light without having to fully raise the blind. In addition, participants seemed skeptical of the push button release on the cellular shade, suggesting that is might attract children. Others simply saw the button as a potential mechanism to break.

4.3.4   Alternative Ideas

Participants made the following suggestions with respect to improving the safety of window coverings:

- "Safety devices should be a part of the window covering permanently to avoid the problem with the user taking it on or off."

- Better marketing. Safety devices should come with the window covering and should be advertised on the box. The potential hazard should be fully explained, followed by an explanation of how the safety device has the potential to mitigate the problem.

- Safety information needs to be highlighted or addressed upfront in the window covering installation manual.

- All window coverings should be cordless. It should not be an option to select a blind or shade equipped with a cord.

- A wand or a remote should be considered by manufactures as replacement mechanisms for the cords.

- Cost tends to be a driving factor in people's willingness to purchase. If cordless blinds were in the same price range as the corded option, more people may be inclined to purchase the safer blind.

- Window coverings should be addressed with pet owners. Participants in one group felt that, "people will do anything for their pets" and that perhaps they should try to revise the marketing plan and focus on pet safety. Several participants agreed and thought that it was important to note that pets are left at home alone for long periods of time, whereas children are not and therefore pets may be at more risk.

- A few participants suggested that the window covering designers consider things that might attract children (e.g. beaded cords, shiny and bright colors, interesting noises, etc.) and try to avoid incorporating these features into the design.

Conclusions and Discussions **5**

Overall, there was no specific demographic group(s) that was more or less likely to install safer window coverings or safety devices to corded window coverings, other than first time parents. Several participants indicated that first time parents tend to be more safety conscious, but this vigilance tends to lessen overtime; and with subsequent children. It also appears as if the details related to injury and fatality statistics related to children and window covering cords are not widely known or understood among consumers. Some participants were aware of the risk, but felt that this safety issue was addressed years ago. Other participants felt as if the risk was minimal in their homes even though they had not implemented any precautions. Similarly, others considered window coverings substantially less dangerous to their children than other aspects of the home, and therefore attention was paid to items that were perceived as higher priority (e.g. electrical outlets, child safety locks on cabinets, etc.).

The degree to which the general population is aware of the severity of the problem is unclear. However, based on the number and type of misinformed statements made during the course of the study, it is clear that most consumers are missing critical safety information that might prevent a child from being seriously or fatality injured. It also seems as though consumers are unaware of the rapid time period when an incident can occur.

The overarching goal of having cordless window coverings in every home may be years down the road. Thus, the following paragraphs outline factors and strategies that should be considered when addressing this immediate safety need. It seems as though there is a fair amount of misinformation among consumers regarding the degree of risk posed by window covering cords in the presence of small children, suggesting a need for better public information and educational (PI&E) disseminated by industry as well as the CPSC, aimed at providing accurate information related to risks associated with the cords. Providing users with accurate information regarding the risks associated with this hazard might be a good start.

The primary reason for not using a safety device had to do with "ease of use". In general participants felt that most of the safety devices were somewhat cumbersome. Participants felt that they would not use them 100% of the time; and therefore, the device would not be as effective. Participants were also concerned with ease of installation and stability of the device. In general, participants would prefer all window coverings be cordless, or incorporate a passive mechanism, and not require intentional action on the part of the user. That is, in order for a safety feature to be 100% effective, most people believed it should be provided by the manufacturer, be part of the standard package with window covering purchases, and not require the installer or user to actively interact with it on a daily basis.

Related to the dissemination of public information and education information, the installation manual may not be the most effective place to convey any safety information. Many participants noted that manuals are often too wordy and contained poor graphics or illustrations. Overall, people do not read the instructions or installation manuals in detail. Even when focus group participants were instructed to review the manuals in order to speak knowledgeable about the issues, many simply skimmed through them. A majority of the participants admit to glancing at the instruction manual when installing in their own homes, but tend not to read it thoroughly unless they run into a problem with the installation. Often participants did not recall seeing safety information within the installation instructions.

Modifications to the format of the manuals might make them more user friendly to the consumer and increase the likelihood of their use as well as a means of conveying critical safety information. Several participants suggested that the steps for installation be brief and sequential. In addition any information pertaining to safety risks associated with the product should be on the very first page of an installation manual in order to attract the attention of the reader. If illustrations are used, they should be clear and descriptive. Interestingly, participants were better at recalling on-product warnings which appeared as hang tags or stickers on the cords or on the window covering. Perhaps this is an indication that the on-product labels are the location where the critical safety information should be presented.

It is also important to note that not all safety devices that a sold as part of the window covering package were immediately recognized as a safety feature. Very few participants seemed to

understand that in addition to keeping the cord taut, the tension device made it less likely a child could insert his/her head in the looped cord. In addition, many of the focus group participants did not install the cord cleats that came with the purchase of window covering because they were not sure of their function.   Several participants suggested that the installation of the safety device should be listed as a mandatory step in the installation instructions.   Several participants noted that installation of the cord cleat is listed as optional in some of the installation manuals they encountered, and in their opinion this devalues its importance as a safety feature.

Participants in general seemed to understand the need for the different safety devices and were appreciative of their function. Few admitted that they would be inclined to purchase and use any of the ones presented during the focus group as an additional purchase. Presently, most prefer the homegrown solutions of tying the excess cord in a knot or bow. Along these lines, safety devices should be a part of the window covering permanently to avoid problem with user installation error or electing not to install the device at all. Participants suggested including a safety device with all window covering packages, and including information related to the device on the box. The potential hazard should be fully explained, followed by an explanation of how the safety device has the potential to mitigate the problem.

Given the challenges and problems identified with the corded products and safety device, there does not appear to be any broadly effective fix other than cordless window coverings. When trying to minimize the hazard presented by cords there are challenges related to the public's perception of risk, cost of the aftermarket devices or cordless window coverings, the importance of aesthetics when making a purchase, availability and usability of safety information, proper installation, routine use of safety devices, durability, how appealing the features are to children, adult supervision, etc. Cordless products seem to be required for substantial benefits, whereas the approaches outlined above may mitigate the problem some, but will largely be incremental.

Moderator Guide

6383.01 Focus Group on Window Coverings and the Use of Window Covering Safety Devices Moderator Guide

Note: There are questions in this guide that pertain only to a subset of the total recruits. These include participants who are: (1) homeowners, (2) renters, (3) participants with children (under age 5) living with them, (4) participants without children (under age 5) living with them, but have children of this age visit, and (6) participants who are elderly. Sessions will be scheduled according to these groupings. During the sessions, these questions will be omitted when they do not apply to the recruited group.

1.   **Review Purpose, Objective, and Scope of the Focus Group**

Introductions and rules

The purpose of this focus group is to:
- **Learn** more about **how people decide** which window shades and blinds to **buy**
- And how they **use them**.
- We are also trying to **understand the effectiveness** of various **features and devices** that are made for these products.

No special knowledge or ability is required to participate.

You have been **selected to participate** in this focus group because you indicated that **you have window shades and/or blinds** in your home.

During this focus group, you will have an **opportunity to try out several different window shade and blind** configurations and related devices and share your opinions with us.

How many of you have taken part in a focus group?

Before we begin our discussion, I would just like to review some basic focus group rules and guidelines.

    a.   Focus groups have certain rules and etiquette that we follow
        i.   No one will be judging your responses
        ii. We need to hear about <u>your</u> feelings and opinions, not ours. We are not here to reach consensus, but to hear and discuss a range of views. There are no "right" or "wrong" answers.

iii. We want to encourage discussion among group members, not to/from the moderator; the moderator will merely guide the discussion to cover the topics we need to hear about.

iv. We want to give everyone the opportunity to speak – it is important to hear from everyone.

v. The session is being video and audio recorded for analysis later; participation is voluntary.

vi. Rest rooms are down the hall, and breaks are available and planned.

b. Please be completely honest during this discussion. Your responses will NOT be shared with anyone other than people working on the project. Your name and any other identifying information will not be used in any reports that we prepare about the focus group.

c. Please respect the privacy of the other people in this group by not discussing what is said here with anyone outside the group or in public.

d. Our objective is to gain insight about how people use and feel about various types of window coverings and safety systems designed for them. During the session, I will guide us along various topics; but **YOU** are the **experts** and will be doing most of the talking.

2.　　Initial Discussion

Introductions

A.　Participant Experience with Window Coverings

- What type(s) of blinds and/or shades are in your home? ==*Show images of different types.*==
  - What **other type(s) of window coverings** do you have, such as drapes or curtains?

- Did your home **come furnished** with these?

  - For those who said their home came furnished with window coverings:
    - Have you ever considered replacing the window coverings and blinds?
    - How old do you estimate the different blinds and shades in your home to be?

  - **For Renters: Does your rental agreement allow you to purchase and install different window coverings?**

- Which **rooms/locations** have window coverings?

  - in **How many windows** your home have **window coverings** currently installed?

- Do any of the windows have window **ledges or a space where you could climb or stand?**
- What **furniture (or equipment or toys)** do you have positioned near the windows in your home?
    - How close is the furniture (or equipment or toys) to the window?

B. <u>Purchasing and Installing</u>

- Have you ever **purchased** window coverings? This includes blinds, shades, drapes, and curtains.

- What **stores or online websites** did you use (or would you use) to shop for window coverings?

- What **factors** did you consider (or would you consider) when purchasing?

    - Cost
    - Time and effort to install
    - Appearance
    - Safety
    - Availability
    - Product reviews

    - **IF SAFETY WAS A FACTOR:**

        - What do you **mean by safety**?
            - What is a safe blind?

        - **Where** would you **look for safety information** pertaining to the window shade or blind?
            - On the window covering package
            - Safety websites
            - Store websites.

        - When purchasing the blinds, did **anyone ever speak to you about safety**?

        - Do you **recall seeing safety information** when you purchased window coverings?

- **DID YOU INSTALL THE NEW WINDOW COVERINGS YOURSELF?**

    - Tell us about the installation of your window coverings
        - How long did it take? Do you recall:
            - Any difficulties,
            - Frustrations, or

- Problems with the installation?

  o Did you **use any written instructions** to install the window coverings?

    ▪ **If participant used instructions**, ask:
      - How **clear or unclear** were the instructions?
      - Do you recall if the instructions **included safety information**?

  o Were there **warning labels** on the box or the coverings themselves?

    ▪ If participant says yes, ask: Are the warning labels still attached to the window coverings or did you remove them?

  o Did you **install all provided parts and features**, such as cord cleats, tensioners, or other accessories?

    ▪ If not all parts were installed, probe:
      - If not, why?
      - Attractiveness?
      - Difficult to install?
      - Didn't want to damage wall?
      - Weren't necessary for function?

  o Did you make **any modifications during installation?**
    ▪ shortening the cords,
    ▪ shortening the blind,
    ▪ altering cord stops etc?

C. Use and Maintenance

- Do you **adjust your window coverings daily**, or do you leave them at a preset height/orientation/position?

  o Do you ever have **any problems when you are trying to adjust** your window blinds or shades?
    ▪ cord is stuck or jammed,
    ▪ the window covering does not stay at the desired height?

- Have you ever had a shade or blind or **any part of it break or come loose**?
  o If so, what happened?
  o How did you fix it (did you fix it)?

- **IF PARTICIPANT INSTALLED ACCESSORIES**, (cord cleats and tensioners)
  :
  o Do you ever have **any issues when working with a**ccessories (cord cleats, tensioners?

- What **type of issues** do you have?
- Did you **fix the broken accessory** (why or why not)?

    o Did you make **changes to location of devices** over time – for example move the cordstops, move the cleat etc.

    o For those who have cord cleats, ask: Do you ever **find yourself not using it or forgetting to use it**? Why do you think this happens?

D. <u>Perception of Hazards Associated with Window Coverings/Understanding of Risks</u>

- What **safety risks do you see with window shades and blinds**?
  - Where did you **learn about the safety risks** associated with window shades and blinds?

- **Who might be at-risk** (children, pets)? Why?

- Have you **heard any stories** about someone being **injured** by a window shade/blind or cords?

- Do the window shades and blinds at your home **have warnings or safety labels**?
  - Did you **read** the safety label?
  - What **types of information** are included on the label?

- Are you **aware that safety devices exist** for different window blind and shade types?
  - What **types of window covering safety devices** have you heard of?
  - What were some of your reasons why you might install a safety device?

==*Provide a description of the different safety features / aftermarket devices, and show examples of them in use. Ask participants to respond (on paper) to two questions for each device presented.*==

==*Question 1: Have you ever seen this item before today?*==
==*Question 2: Have you ever used this item in your home? There is also space for the participant to write any notes or general impression of the device, for example how effective it might be.*==

==**1) Blind Winder   (2) Cord Cleat (3) Cord Clip (4) Cord Wrap**==

- Have you **purchased a safety device** for your window coverings?
  - If so, **what type**?
  - **Where** did you purchase the safety device?
  - **How did you know** what to buy?

- **FOR RENTERS: Did your rental come with a safety device pre-installed?**

- Have **you ever installed a safety device** for a window covering, if so, what kind(s)?
  - How do you feel the installation process went?
    - Did you use the instruction manual?
    - Was the **instruction manual easy or difficult** to use?

- How willing would you be **to purchase a safety device** for your window covering?

  - What **factors** would **influence your decision** to purchase a safety device?
    - Cost
    - Install requirements
    - Possible damage to wall,
    - Convenience,
    - Aesthetics
    - Need for safety device?

  - Where would you **look for information** on window covering **safety devices**?
  - How would you decide **which device to install**?

- What are some of the **reasons** you may **not install a safety device**?
  - Cost too much,
  - installation was onerous,
  - unaware safety devices existed,
  - kids are always supervised,
  - cords are high up,
  - no visible cords,
  - room is not used by kids – no need.

- What are some reasons why you may choose **not** to **use** the safety device?
  - onerous,
  - broken,
  - forget,
  - see it as not necessary over time,
  - no children present.

E. **Questions Specific to Participants with Children (under age 5) Living in the Household**

- What are some common **situations when you may leave your child alone** in the house?
  - When you are in the kitchen making dinner
  - Your child is playing in the den
  - Child is taking a nap.
- What is the **longest period of time you would feel comfortable** leaving your child **under the age of 5** in the room by him/herself?

- o Are there some **rooms** you would **leave the child alone longer** than other rooms?
- o Are there **any rooms** where **you would never** leave a child unsupervised?

- **GENERAL CHILD DEVELOPMENT/BEHAVIOR:**

- Did you ever **see** a child this age (2-5 years) **play with household items in a way you wouldn't expect** or in a way that is not really suitable for that object?
  - Can you share some examples?

- Have you ever noticed your **children** (under age 5) **playing with or showing an interest** in the blinds or shades in your home?
  - o Have you **ever experienced a close-call** with children playing **with the window coverings** that resulted in a possible dangerous situation?
  - o Have you ever **spoken to your children about not playing** with the blinds or shades in your household?
    - If so, **what did you say** or do?
      - Do you think at this age talking to children, reprimanding them, giving rules works?
      - Do you think the rules stick?

  - o Have you ever **discussed safety** around window coverings **with older siblings** or other caregivers?

  - o Have you noticed if the **window cords are knotted or looped** by children?
  - o In your opinion, **what age child would be most likely to play with window coverings** and thus need safety devices on the window coverings?
  - o **Which type of blinds or shades** do you believe may **appeal more to children**?
    - specific features or devices that may be more interesting to them? [*Reference pictures of different blind/ shade types.*]

- Do you think there are rooms that may be more critical for installation of safer blinds?
  - o What rooms are those?
  - o Are there any rooms you would consider **using a cordless window covering** instead of a safety device?
    - What is your reasoning for doing so? [*If necessary, provide a description of a cordless blind and an example of the product.*]

F. <u>Questions Specific to Participants Who Do Not Have Children Living in the Household</u>

- How **frequently** do children under the age of 5 **visit** your household?
- What **type of safety concerns** do you consider when children are visiting your home?

- Have you ever **noticed these children playing with the blinds** or shades?

G. Questions Specific to Elderly Participants

- How **frequently do children under the age of 5 visit** your household?

- What **type of safety concerns do you consider** when children are visiting your home?

- Have you **ever noticed these children playing with the blinds** or shades?

- Do you **ever experience difficulty working with your window blinds** and shades?

- How **likely would you be to install safety devices** for your blinds and shades?

3.   Hands-On Product Exposure

Now, you will each get an opportunity to experience several window shades, blinds, and different safety devices. Once you all have participated in this exercise, we will come back here, and I would like you to provide some feedback on your experiences.

While you are working with the different window covering and safety devices, we want you to please think aloud and describe what you are doing and tell us about any positive or negative feedback you may have. Tells us if you are confused, things you like, things you don't like, anything that comes to mind. I will do a demonstration of the think aloud technique later.

A copy of the installation manual for each blind you will be asked to work with will be present at the station. There is no need to read the installation manual out loud, but please look it over. There will also be instructions for each blind you are asked to work with that detail exactly what we want you to do. As part of the instructions for each blind we will ask you a series of questions. Please read these questions out loud and respond out loud so that our cameras capture both the question and your response.

We will be nearby while you are working with the blinds and shades in case you have any questions. You will have 9 minutes to work with each blind. We will tell you when to move on to the next blind, please do not advance even if you get done early before the 9 minutes is up.

Now I am going to demonstrate the "think aloud" technique.

==Do demonstration of "think aloud' using the example of tying your shoe.==

During the hands-on portion, participants will be encouraged to "think aloud" as they perform the tasks. They will also be asked specific questions that pertain to the window coverings or safety devices. Participants will all experience the same types of blinds and shades and safety devices so that they can all speak on to the same topics. Participants will be asked to review the instruction manual for each blind they experience and will also be asked to perform a set of activities when working with the different blinds. Participants will be videotaped during this part of the session.

Instructions for what participants are expected to do with each blind type at each station will be clearly posted. Experimenters will be walking around to help answer any questions and to confirm participants are properly engaged in the task.

4. Follow-Up Discussion

A. **Response to Labels and Instructions**

   <mark>*Provide participants with laminated copies of the instruction manuals to review at the table and discuss likes and dislikes.*</mark>

   - Did you use the written instructions?
     o Were the instructions clear?
     o Were certain instructions more clear than others, if so why?
     o How could the instructions be improved?

   - How **confident** are you that you **could have properly installed everything** on your own?

   - What appears **unclear or difficult based on the instructions or working with the product**?
     o Are there **aspects of instruction**, **installation, use that you might ignore**?

   - Did you notice **any safety information** on the instructions?
     o What **type of information** did the instructions present?
       ▪ How **easy or difficult** was it to understand **the labels** on the window coverings?
       ▪ How **easy or difficult** was it to understand the **instruction manual**?

B. **Perceived Barriers to Installation and Use**

   - How **easy/difficult** was it to **install/use** the different devices?

   Install: Tensioner (Group A and B)

   Use: Cleat (Both),
   Cord Wind-up (Group A),
   Cord Winder (Group B), and
   Breakaway feature (Group B)

   - How likely would you be **to purchase and install** a safety device?

   - **For Renters:**
     o **As a renter with children, how likely are you to purchase/install a safety device?**

C. <u>Acceptance & Use</u>

If time, use these probes with the different demonstrated cord cleats and cord winder devices.

- In your opinion, **how effective** would ____ *(insert specific safety device and hold up an example, repeat for all types)* **safety devices be in preventing hazards**?

  - o How **easy or difficult** was it to **instal**l ____?
    - ▪ Please describe any **challenges** you faced
    .
  - o How **easy or difficult** was ____ to use?
    - ▪ Please describe any **challenges** you faced.

  - o Would you use __ **each time** you operate the blind?
    - ▪ Are there certain times when you **wouldn't** use it?

  - o What are some **potential dangers** that you think may **remain even after a safety device** has been installed?
    - ▪ If cord cleat is not installed high enough, child can reach and undo the cord.
    - ▪ Alternatively, if tension device is not installed to provide sufficient tension, the opening might be large enough for the child to insert his head).

  - o How likely is it that this **window covering or safety device would malfunction** or require repair?
    - o What **type of maintenance** do you think this would require?

- **SPECIFIC TO THE <u>TENSION DEVICE</u>**

- For this particular device did you notice if it is **difficult to use if the device is not located in the right location?**
  - o Could you lift the blind all the way?
  - o What did you think of it?

- How about a **CORDLESS OPTION**,
  - o How likely would you be to **purchase this type** of blind or shade?
  - o What would **prevent you** (and others) from **purchasing** a cordless blind or shade?
    - ▪ *Provide a description of a cordless blind and an example of the product.*

  - What **modifications** can be made to the different blinds to make the blinds safer?

D. <u>Alternative Ideas</u>

- Does anyone have anything else they would like to mention about window coverings or safety devices for window coverings before we conclude the focus group? Are there any issues that we have not raised?

5.   Wrap-Up

Thank you for your time. What we have heard and learned today will help us understand better the use patterns of window coverings and the effectiveness of various window covering safety devices.

- Instruct participants about how they will be reimbursed for their time.

Instructions for Window Coverings

A1 INSTRUCTIONS:

PLEASE REMEMBER TO THINK OUT LOUD WHEN WORKING WITH THE BLINDS & SHADES

- The installation and instruction manual for the blind is hanging from the window frame in the clear pouch. Please take some time to review the manual.

- Please try opening and closing the vertical blinds.

- Also try adjusting the panels to change the amount of light they let in.

- While working with the blind try to think about whether or not you would like to have this blind in your home.

- After working with the blind, please read each question below out loud, and respond out loud so that our cameras are able to capture both the question and your response.

    1. *How easy or difficult was this blind to operate?*

    2. *Based on what you read in the instruction manual:*
        a. *How easy or difficult would it be to install this window blind?*
        b. *How confident would you be that you installed it correctly?*

    3. *Do you believe anything about this blind would be attractive to young children?*
        a. *Can you imagine a child interacting/playing with this type of blind?*
        b. *What child safety issues do you see with this product?*

    4. *What safety features can you identify? How important and effective do you think the safety features are?*

5. *What modifications can be made to this blind to make it safer?*

6. *What features of this product would encourage you to purchase or not purchase it?*

A2 INSTRUCTIONS:

PLEASE REMEMBER TO THINK OUT LOUD WHEN WORKING WITH THE BLINDS & SHADES

- The installation and instruction manual for the blind is hanging from the window frame in the clear pouch. Please take some time to review the manual.

- Please try opening and closing the cellular blind. Please take note of how the blind functions.

- You will notice there is a device attached to the blind cord that looks like this. It is called a tension device. As part of this activity we will want you to install it on the wood frame using a screw driver. There are several pre-drilled holes for you to use when screwing the device into the wooden frame. After the tension device is installed, please try opening and closing the cellular blind. Please take note of how the blind functions.

- While working with the blind try to think about whether or not you would like to have this blind in your home.

- After working with the blind, <u>please read each question below out loud, and respond out loud</u> so that our cameras are able to capture both the question and your response.

1. *How easy or difficult was it to operate the blind **<u>before</u>** installing the tension device?*

2. *How easy or difficult was it to install the tensioner device? How confident are you that you installed the tension device correctly?*

3. *How easy or difficult was it to operate the blind **<u>after</u>** installing the tension device? Was it more or less difficult than before the tension device was installed?*

4.   *Do you believe anything about this blind would be attractive to young children?*
        a. *Can you imagine a child interacting/playing with this type of blind?*
        b. *What child safety issues do you see with this product?*

5.   *What safety features can you identify? How important and effective do you think the safety features are?*

6.   *What modifications can be made to this blind to make it safer?*

7.   *What features of this product would encourage you to purchase or not purchase it?*

A3 INSTRUCTIONS:

<mark>PLEASE REMEMBER TO THINK OUT LOUD WHEN WORKING WITH THE BLINDS & SHADES</mark>

- The installation and instruction manual for the shade is hanging from the window frame in the clear pouch. Please take some time to review the manual.

- Please try opening and closing the roman shade. Please take note of how the shade functions.

- After operating the shade, try to use the cord cleat. The cord cleat looks like this, and is attached the wooden frame. The cord cleat allows the user to wrap extra cord. Please take note of how the cord cleat device functions.

- While working with the shade try to think about whether or not you would like to have this shade and cord cleat installed in your home.

- After working with the shade, <u>please read each question below out loud, and respond out loud</u> so that our cameras are able to capture both the question and your response.

1.   *How easy or difficult was it to use the cleat? What did you like / dislike about it?*

2.   *Do you believe anything about this shade would be attractive to young children?*
        a. *Can you imagine a child interacting/playing with this type of shade?*

b. What child safety issues do you see with this product?

3. *What safety features can you identify? How important and effective do you think the safety features are?*

4. *What modifications can be made to this shade to make it safer?*

5. *What features of this product would encourage you to purchase or not purchase it?*

A4 INSTRUCTIONS:

<mark>PLEASE REMEMBER TO THINK OUT LOUD WHEN WORKING WITH THE BLINDS & SHADES</mark>

- The installation and instruction manual for the blind is hanging from the window frame in the clear pouch. Please take some time to review the manual.

- Please try opening and closing the horizontal blind. Please take note of how the blind functions.

- After operating the blind, please try the cord wind-up. The cord wind-up looks like this
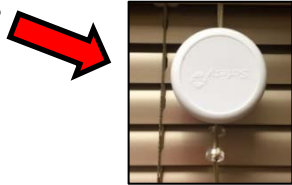
  The instruction manual for the cord wind-up is present. Please note how the cord wind-up functions.

- While working with the blind try to think about whether or not you would like to have this blind in your home.

- After working with the blind, <u>please read each question below out loud, and respond out loud</u> so that our cameras are able to capture both the question and your response.

  1. *How easy or difficult was this blind to operate?*
  2. *What was your experience like working with the cord wind-up?*

a. How easy or difficult was it to use?
b. What do you think it is for?
c. How important and effective do you think the cord wind-up is?

3. Based on what you read in the instruction manual:
a. How easy or difficult would it be to install this window blind?
b. How confident would you be that you installed it correctly?

4. Do you believe anything about this blind would be attractive to young children?
a. Can you imagine a child interacting/playing with this type of blind?
b. What child safety issues do you see with this product?

5. What safety features can you identify? How important and effective do you think the safety features are?

6. What modifications can be made to this blind to make it safer?

7. What features of this product would encourage you to purchase or not purchase it?

B1 INSTRUCTIONS:

<mark>PLEASE REMEMBER TO THINK OUT LOUD WHEN WORKING WITH THE BLINDS & SHADES</mark>

- The installation and instruction manual for the blind is hanging from the window frame in the clear pouch. Please take some time to review the manual.

- Please try opening and closing the horizontal blind. Please take note of how the blind functions.

- After operating the blind, please try the cord winder. The cord winder looks like this

The instruction manual for the cord winder is present. Please note how the cord winder functions.

- While working with the blind try to think about whether or not you would like to have this blind in your home.
- After working with the blind, <u>please read each question below out loud, and respond out loud</u> so that our cameras are able to capture both the question and your response.

1. *How easy or difficult was this blind to operate?*

2. *What was your experience like working with the cord winder?*
   a. *How easy or difficult was it to use?*
   b. *What do you think it is for?*
   c. *How important and effective do you think the cord winder is?*

3. *Based on what you read in the instruction manual:*
   a. *How easy or difficult would it be to install this window blind?*
   b. *How confident would you be that you installed it correctly?*

4. *Do you believe anything about this blind would be attractive to young children?*
   a. *Can you imagine a child interacting/playing with this type of blind?*
   b. *What child safety issues do you see with this product?*

5. *What safety features can you identify? How important and effective do you think the safety features are?*

6. *What modifications can be made to this blind to make it safer?*

7. *What features of this product would encourage you to purchase or not purchase it?*

B2 INSTRUCTIONS:

<mark>PLEASE REMEMBER TO THINK OUT LOUD WHEN WORKING WITH THE BLINDS & SHADES</mark>

- The installation and instruction manual for the shade is hanging from the window frame in the clear pouch. Please take some time to review the manual.

- Please try opening and closing the roller shade. Please take note of how the shade functions.

- You will notice there is a device attached to the shade cord that looks like this. This is a tension device also called a cord guide. As part of this activity we will want you to install it on the wood frame using a screw driver. There are several pre-drilled holes for you to use when screwing the device into the wooden frame. After the tension device is installed, please try opening and closing the roller shade. Please take note of how the shade functions.

- While working with the shade try to think about whether or not you would like to have this shade in your home.

- After working with the shade, <u>please read each question below out loud, and respond out loud</u> so that our cameras are able to capture both the question and your response.

  1. *How easy or difficult was it to operate the shade **before** installing the tension device?*

  2. *How easy or difficult was it to install the tensioner device? How confident are you that you installed the tension device correctly?*

  3. *How easy or difficult was it to operate the shade **after** installing the tension device? Was it more or less difficult than before the tension device was installed?*

  4. *Do you believe anything about this shade would be attractive to young children?*
     a. Can you imagine a child interacting/playing with this type of shade?
     b. What child safety issues do you see with this product?

  5. *What safety features can you identify? How important and effective do you think the safety features are?*

  6. *What modifications can be made to this shade to make it safer?*

  7. *What features of this product would encourage you to purchase or not purchase it?*

B3 INSTRUCTIONS:

- The installation and instruction manual for the blind is hanging from the window frame in the clear pouch. Please take some time to review the manual.

- Please try opening and closing the horizontal blind. Please take note of how the blind functions.

- After operating the blind, please test out the safety cord consolidator, also called a breakaway device that is part of the blind. The breakaway device looks like this Please take note of how the breakaway device functions.

- While working with the blind try to think about whether or not you would like to have this blind in your home.

- After working with the blind, please read each question below out loud, and respond out loud so that our cameras are able to capture both the question and your response.
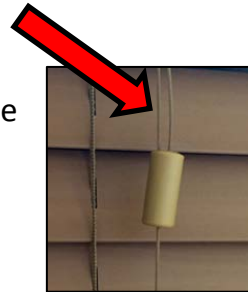
    1. *In your opinion what is the purpose of the breakaway feature on this blind?*

    2. *Did the breakaway feature work when you tested it?*

    3. *What are some ways you could see the breakaway failing?*

    4. *Do you believe anything about this blind would be attractive to young children?*
        a. *Can you imagine a child interacting/playing with this type of blind?*
        b. *What child safety issues do you see with this product?*

    5. *What safety features can you identify? How important and effective do you think the safety features are?*

    6. *What modifications can be made to this blind to make it safer?*

    7. *What features of this product would encourage you to purchase or not purchase it?*

B4 INSTRUCTIONS:

PLEASE REMEMBER TO THINK OUT LOUD WHEN WORKING WITH THE BLINDS & SHADES

- The installation and instruction manual for the shade is hanging from the window frame in the clear pouch. Please take some time to review the manual.

- Please try opening and closing the roman shade. Please take note of how the shade functions.

- After operating the shade, try to use the cord cleat. The cord cleat looks like this and is attached the wooden frame. The cord cleat allows the user to wrap extra cord. Please take note of how the cord cleat device functions.

- While working with the shade try to think about what you like and dislike if this shade and cord cleat were installed in your home.

- After working with the shade, please read each question below out loud, and respond out loud so that our cameras are able to capture both the question and your response.

  1. *How easy or difficult was it to use the cleat? What did you like / dislike about it?*

  2. *Do you believe anything about this shade would be attractive to young children?*
     a. *Can you imagine a child interacting/playing with this type of shade?*
     b. *What child safety issues do you see with this product?*

  3. *What safety features can you identify? How important and effective do you think the safety features are?*

  4. *What modifications can be made to this shade to make it safer?*

  5. *What features of this product would encourage you to purchase or not purchase it?*

Phone Screener

Date: _____

Entered into database: Y / N

Focus Group on Window Shades and Blinds
Recruitment Telephone Screener Guide

Thank you for calling about the focus group on window blinds and shades. Westat is conducting this study for the federal government. We are trying to understand how people decide which window shades and blinds to buy, and how they use them. We are also trying to understand the effectiveness of various features and devices that are made to be used with window blinds and shades. No special knowledge or ability is required to participate. The focus group will take about 1.5 hours and will take place at 1600 Research Blvd, Rockville, MD 20850.

During the focus group, you will be asked to participate in a discussion about your experiences with window shades and blinds, as well as interact with a few different types of window coverings and related devices.

We will not be scheduling you for a focus group today. We need to recruit a number of available people before we try to schedule a session. If you are eligible, we will add your name to the list of potential participants. If selected, you will be paid $75 for your participation, upon session completion.

If you are interested, I will need to ask you a few questions to determine your eligibility. Are you interested in participating?

     a. Yes *(If yes, proceed to question 1)*.

     b. No *(If no, thank participant for their time)*.

    1. Which of one of the following categories best describes your age?
        a. 18-25
        b. 26-35
        c. 36-45
        d. 46-55
        e. 56-65
        f. 66-75
        g. 76+

2. What is your gender?
(Record based on observation, ask only if unsure)
       a. Male   b. Female

3. Do you rent or own your primary residence?
   a.   RENT   b. OWN

4. Do you have either window blinds or shades in your household?
   a.   YES
   b.   NO
   c.   Don't know

       If no, read "Thank you for your time and interest. That concludes the information we need from you at this point. Once we get a pool of names together, we will schedule the focus groups. We cannot guarantee that you will be included because participation depends on the times that we meet and the total number of people that are signed up."

5. I am going to describe some examples of different window blinds and shades. If you have this type of window covering in your home, please say yes to all that apply. *(Read the descriptions and check all that apply.)*

   ☐ Horizontal (Venetian) Blinds:

   Made of slats that run side-to-side (or horizontal) placed one on top of another. The slats can be rotated using a cord (rope) or wand (stick) to let more or less light in. The blinds can also be raised or lowered using a cord or a rope.

   ☐ Vertical Blinds:

   Made of slats that run up and down (or vertical), they can be rotated using a cord (rope) or wand (stick) to let in more or less light. The slats can also be pulled to one side using a cord or rope, so that the entire window or door is clear.

   ☐ Roman Shades:

   Made of fabric or other flexible material such as bamboo. When opened, the fabric pleats or bunches up. The shade is usually operated with a cord.

   ☐ Roller Shades:

   Fabric or plastic material wraps around a roller at the top of the window and hangs down to the bottom of the window to block out light. To open the shade, a cord or chain in a continuous loop raises the fabric so that it wraps around the top roller.

   ☐ Cellular (Honeycomb/Pleated) Shades:

   Made of two layers of cloth-like material, these shades form honeycombed shaped (or hexagon-shaped) cells when they are lowered to the bottom of the window. They are usually operated by using a continuous chain or cord loop.

   ☐ Other (specify): _____

   ☐ Don't know

6. Now I am going to describe examples of some of the different features and devices that are made to work with window blinds and shades. If the blinds or shades in your home have any of these additional features or devices installed, please say yes to all that apply? *(Read the descriptions, then check all that apply.)*

☐ Cord Tensioners:

Attaches to continuous loop cords or chains, when properly installed to the window frame or wall, the loop can smoothly pass through the device. If not installed, the device cannot move along the cord, hindering the function of the blind.

☐ Cord Cleats:

A hook attached to the wall or window frame that the cord can loop around, which prevents the cord from tangling or getting in the way of the window.

☐ Wind ups/retractors:

A plastic device that retracts the cord when not in use.

☐ Cord Stop:

Small beads that are placed at the top of a cord when fully retracted, they prevent inner cords from pulling out too far.

☐ Cord Winder:

Cords are wrapped around the device to keep the cord out of the way. It is similar to a cleat, but not attached to the wall.

☐ Drapery or Curtain Tie:

A window treatment that accompanies a cloth curtain that functions to tie-back or hold the curtain in place. Usually a rope, cord, braid, u-shaped fabric, or tassel.

☐ Wand:

A hard plastic, metal, or wooden cylinder that is used to control how much light is let in by the window covering.

☐ Other (specify): _____

☐ Don't know

☐ N/A

7. Are there any children **under the age of 5 who live** with you?
   a. YES   b. NO

   If yes, ask question 8, if no, proceed to question 9.

8. Please provide the ages of any children **under age 5 who live with you**. There is space to record the ages for up to 5 children.
   a. *Child 1:* _____
   b. *Child 2:* _____
   c. *Child 3:* _____
   d. *Child 4:* _____
   e. *Child 5:* _____
   f. N/A

9. Are there any children **under the age of 5 who visit your home**?
    a. YES   b. NO

10. Please provide the ages of any children **under age 5 who visit your home**. There is space to record the ages of up to 5 children.
    a. *Child 1: _____*
    b. *Child 2: _____*
    c. *Child 3: _____*
    d. *Child 4: _____*
    e. *Child 5: _____*
    f. N/A

11. How frequently do children **under age 5 visit your home**?
    a. One or more times per week
    b. One to two times per month, but no more
    c. Once or twice a year, but no more
    d. Less than once a year
    e. Don't know
    f. Other (specify): _____
    g. N/A

12. Please provide your name (first name only is fine):

    _____.

13. Please provide a phone number where we can easily contact you if you are selected for the study:

    _____.

14. Please provide a valid email address where you can be reached if you are selected for the study:

    _____.

15. For statistical purposes only, could you please identify your race from the following categories? Please indicate all that apply by saying yes after I read the selection. *(Read categories, then circle all that apply)*
    a. White/Caucasian
    b. Black/African-American
    c. Hispanic/Latino
    d. Asian
    e. Middle Eastern
    f. American Indian or Alaska Native
    g. Native Hawaiian or Pacific Islander

h. Other (specify): _____
i. Don't know
j. Prefer not to answer

16. For statistical purposes only, will you please tell me which one of the following categories best represents your total family income?
    a. Less than $10,000
    b. $10,000-$14,999
    c. $15,000-$24,999
    d. $25,000-$34,999
    e. $35,000-$49,999
    f. $50,000-$74,999
    g. $75,000-$99,999
    h. $100,000-$149,999
    i. $150,000-$199,999
    j. $200,000+
    k. Don't know
    l. Prefer not to answer

17. How did you hear about the study?
    a.   Newspaper
    b.   Friend
    c.   Email
    d.   Craig's List
    e.   Flyer
    f.   Other: _____

18. Can you tell me which days and times of the week when you might be available, if you are selected to participate?

_____

_____

Closing:

Thank you for your time and interest. Once we get a pool of names together, we will schedule the focus group. We cannot guarantee that you will be included because participation depends on the times that we meet and the total number of people that are signed up. However, we will make every effort to include you.

Hands-On Task Video Coding Protocol

STUDY BACKGROUND

Participants in this study take part in focus groups on window blinds and shades. The cords used to control window blinds and shades pose a hazard to young children, and because of this, the objective of the study is to gain an understanding of what people know about the hazards, and how likely they are to use aftermarket devices to make their window blinds safer. There are a maximum of 6 participants in each focus group session.

Part of the focus group is a hands-on experience with selected blinds and aftermarket devices. Participants go to separate rooms to test out 2 window coverings (and aftermarket devices). After several minutes, they switch rooms with another participant to test out another 2 blinds (everyone testing a total of 4 different blind configurations).. For each blind, participants are given a unique set of directions to guide their interaction. For some, they are asked to install a safety device, and for others they are asked to try out a device that has already been installed. While working with all the blinds participants are asked to "think out loud," which means they are asked to narrate everything they do and feel as they work with each blind. Included in each set of instructions is a series of questions. Participants are also instructed to read each question out loud and answer each question out loud.

PARTICIPANTS & GROUPINGS

In order to obtain a variety of opinions and experiences, we recruited participants from a number of different demographics. These are (along with their acronyms):

- Homeowners with children under the age of 5 (**HC**)
- Renters with children under the age of 5 (**RC**)
- Homeowners without children under the age of 5 (**HN**)
- Renters without children under the age of 5 (**RN**)
- Elderly Renters (**RE**)
- Elderly homeowners (**HE**)

Because there are so many window coverings to test (7 to be precise) we broke people into two groupings: A & B. Each grouping has examples of 4 types of blind types, and each participant tests out the 4 blinds (one grouping) during each focus group. Video files will be named by the different participant demographics and by grouping. For example, you will come across groups such as HCA (Homeowners with Children, Grouping A) or RCB (Renters with Children, Grouping B).

PHYSICAL SET-UP

There are 6 stations (S1-S6). Each station has a wooden frame that displays two blinds on each side (total of 4 blinds). However, each participant will only be working with one side during a given focus group session. Cameras and microphones are set up in each room to record the participants' thoughts while working with the blinds as they think out loud. Each blind is clearly labeled (A1, A2, A3, A4, B1, B2, B3, and B4). As noted before, participants in Group A will only be working with blinds A1, A2, A3, and A4 and participants in Group B will work with B1, B2,

B3, and B4. After a participant finishes with the first two blinds, then he/she will switch stations with another participant and try out two new blinds.

Some blinds have either a cleat attached to the frame or a tensioner attached to the cord that the participant is asked to use. One two of the blinds (A2 and B2) the participant is asked to install a tensioner. For other blinds, the participants are provided with an aftermarket device and directed to install on the window covering. Below are pictures showing what some of these devices look like.

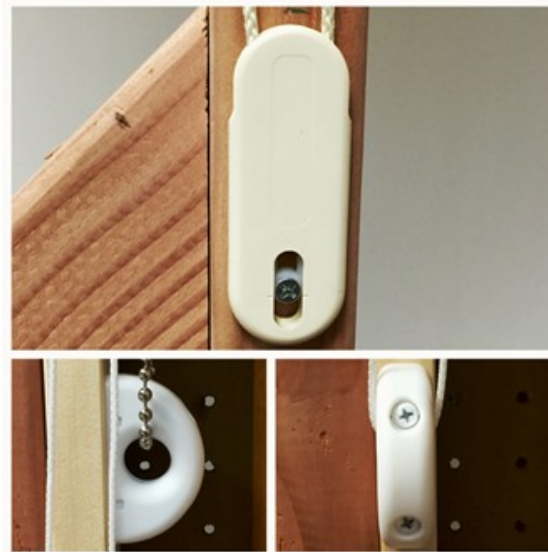FIGURE 1. CORD CLEAT   (ON BLINDS A3 AND B4)
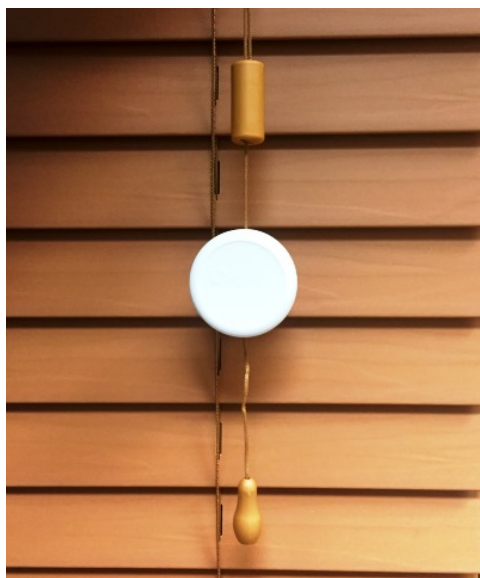

Figure 2. Tensioner (on Blinds A1, A2, AND B2)

FIGURE 3. WIND-UP (ON BLIND A4)

FIGURE 4. CORD WINDER (ON BLIND B1)

VIDEOS

For each focus group there will be up to 6 videos (1 video per station). When watching the videos you will see a participant testing out two blinds, leave, and then another participant coming in to test the same two blinds.

The names of the videos that you import into Morae will be the same name that you give the Morae file itself. These titles are pretty long, but are necessary to because they convey a lot of information to anyone who will be reading the Morae file. It will follow the format **"DATE_STATION#_GROUP_P#_P#"**

- Example: 03172016_S4_RCA_P31_P33

GENERAL CODING STEPS

You will need to download Morae Manager to code the videos. You can download it
https://www.techsmith.com/download/morae/

Use the free trial for now. If you already had Morae Manager installed and your free trial is up, you will be given a license number. TechSmith website also has some pretty great tutorials.

1. Copy Morae template from CORDS network folder onto your computer's C drive
   a. Template location:
2. Copy your assigned video onto your computer
3. Import video into the Morae template
   a. Video location: K:\TRANSSTUDIES\ACTIVE\Cords\Video Coding\Videos for Coding
   b. Go to File → Import → Video
   c. File type: All Supported Files
   d. Select video and click "open"
4. Rename the Morae file as the title of the video (simply copy and paste in order to avoid typographical errors)
5. Quickly watch through video, putting in Start/End markers when each participant starts/ends working with a certain blind.
6. Insert tasks (see below for specific tasks) for each blind that a participant works on:

   a. Select the "start" marker and press the green arrow (see right)
   b. Select the "end" marker and press the red arrow (see right)
   c. Press the clipboard icon and select the appropriate task. Tasks correspond with the window covering that the participant is working with (e.g. A1, A2, …)
7. Watch the video in real time and insert markers for each task as needed.
8. When the participant gets to the portion where they read questions and answer them out loud, you will need transcribe the participant's answers as you understand them in the proper excel document (detailed below).
9. Once you have completely coded the video for 2 participants, upload the Morae file back to the network location.

TASKS

For this study, Morae tasks will be the amount of time a participant spends on any given window covering. Tasks will be marked by the name of the specific window covering, A1, A2 and so on in the coding template. Because there will actually be two people working on any given window covering, there will be an "a" and "b" version of each task. These letters are purely chronological. The first person in the room will always be "a" and the second person in the room will always be "b."

Please note that for any given video, only FOUR tasks will be marked as "in use" (out of a possible 16: A1a, A1b, A2a, A2b, A3a, A3b, A4a, A4b, B1a, B1b, B2a, B2b, B3a, B3b, B4a, and B4b).

MARKERS

The following markers will be in the template:

- **Start (S)** –place this marker when the participant starts to work on any given window covering. This will usually be when the participant is told to begin working with the window covering by experimenter. Another indicator is when the participant begins readings the laminated instructions.
- **End (E)** – place this marker when the participant stops working on a window covering. This will usually be when the participant is told to stop by the experimenter or to move on to the next window blind. Another indicator is when the participant puts down the laminated instructions and stops engaging in the task of working with the blind.
- **Comment (C)** –this will be if you notice something note-worthy. For example, if you see a participant struggling to use the cord cleat, then you would insert this marker. After inserting the marker, you would insert a text note describing what you observe (see below):
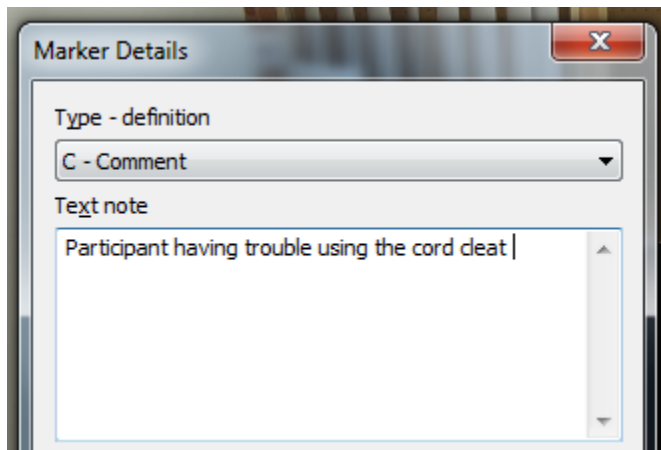
- **Read Manual (M)** –you will insert this marker twice –once when the participant starts reading the window covering's manual and other time when they finish reading the manual. If the participant re-visits the manual multiple times during an installation, mark each start and finish.
- **Frustration (F)** –this may occur if a participant is having trouble reading the installation manual, as well as when operating the window covering or installing a device, and has **expressed** frustration or dislike. When placing this marker, be sure to include a text note explaining what was observed and why you interpreted it as frustration.

- **Confusion (X)** –this may occur if a participant is having trouble reading the installation manual, as well as when operating the blind or installing a device, and has expressed uncertainty. When placing this marker, be sure to a text note explaining what was observed and why you interpreted it as confusion.
- **Installed Correct (G)** –For blinds A2 and B2 participants need to install a cord tensioner. If the participant installed it so that the cord loop is taught (i.e. a child couldn't stick their head through the loop) then it was installed CORRECTLY. In the video you will notice several pre-drilled holes, if the participant installed the tensioner in the second hole from the bottom, then the tensioner is installed properly. Selecting any other holes would result in a loose or bunched up loop and is not correctly installed.
- **Installed Incorrect (I)** –For blinds A2 and B2 participants need to install a cord tensioner. If the participant installed it so that the cord loop is loose or bunching up (i.e. a child could stick their head through the loop) then it was installed INCORRECTLY. Some participants may not screw in the tensioner all the way, resulting in it being pulled out when they try to operate the blind. This would also count as an INCORRECT installation.
- **Cord Cleat Tested (T)** - For blinds A3 and B4 participants were asked to test out a cord cleat. Please mark when the participant tested out the cleat by marking the start and stop. Insert comment stating if participant has used cleat correctly or incorrectly.
- **Aftermarket Device Installed (A)** - For blinds A4 and B1 participants were asked to install an aftermarket device. Please mark when the participant installed the aftermarket device by marking the start and stop. Insert comment stating if participant has installed device correctly or incorrectly.
- **Breakaway Tested (B)** - For blind B3 the participant was asked to test a breakaway device. Mark when this occurs. Insert comment stating if participant has used device correctly or incorrectly.
- **Activity Not Performed (N)** –For any blinds where the participant was instructed to install an aftermarket safety device/tensioner or test a breakaway/cord cleat but did not perform the activity.

PARTICIPANT QUESTIONS & COMMENTS

Each blind has slightly different questions that the participant must answer. For this reason, there is an excel file ("Participant comments") where you must transcribe participant answers to each question. Create your own copy of this file on the network so that you don't have to worry about two people working on it at the same time). In this excel file, every tab represents a different blind. While the questions (as well as space for you to type their response) is already included in the excel file, you may find that participants do not answer the questions in order. Therefore, it is important that you pay attention to what question the participant is reading. If a person omits a question and response, please indicate this by typing in "Omitted."

MORAE SHORTCUTS:

- Space bar= play/pause
- Ctrl + 1= ahead one second
- Ctrl + Shift + 1 = back one second
- Ctrl + 2= ahead two seconds
- Ctrl +Shift + 2= back two seconds
- Ctrl + 3= ahead 5 seconds
- Ctrl +Shift + 3= back 5 seconds
- Ctrl + 4= ahead 10 seconds
- Ctrl + Shift + 4= back 10 seconds
- Ctrl + T= task
- Zoom to selection= allows you to focus in on one task

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- Ctrl + M= put a marker in
  - Ctrl + M + marker code + enter (adds in the marker)
- Only notes made on markers will show up in the output file (not notes made on tasks)
- **Be careful not to move the markers on the timeline**
- **Be careful not to hit Ctrl + N- this will open a new file and not save your previous file**

Appendix E

Coded Video Quality Control Procedures

GENERAL STEPS

1. Make sure there are four (or two if there is only one participant) tasks.
2. Scroll through markers to ensure there are no markers outside a task.
3. Read through all marker notes.
4. If a comment falls within the "frustration" or "confusion" category, change the marker type to appropriate description.
5. If there are not a lot of markers, watch through a segment of the video (approximately 5 minutes) to make sure the coder didn't miss anything.
6. Review "read manual" code segments to verify it is coded properly.

FOR BLINDS A2 & B2

1. Check to make sure the proper marker (correct or incorrect) was assigned to tensioner installation.
2. If tensioner was installed incorrectly, add a description (if not already there) as to why it's incorrect (too loose? Not screwed in all the way?).
3. Review clip (start/stop) to confirm coder captured all remarks and non-verbal actions that indicate frustration/confusion.

FOR BLINDS A4 & B1

1. Check to make sure there was a marker for "Aftermarket device installation."
2. If not already there, add a note stating if the device was installed correctly or incorrectly.
3. Review clip (start/stop) to confirm coder captured all remarks and non-verbal actions that indicate frustration/confusion.

FOR BLINDS B3

1. Check to make sure there was a marker for "Breakaway tested."
2. If not already there, add a not stating if the participant was successful using the breakaway.
3. Review clip (start/stop) to confirm coder captured all remarks and non-verbal actions that indicate frustration/confusion.

Focus Group Questionnaire

Participant ID: _____

Date: _____

Please check the appropriate *yes* or *no* box for each question:

Blind Winder	Yes	No
1. Before today, have you ever seen a *blind winder* before?		
2. Have you ever purchased or used the *blind winder* device in your home?		
Notes:		

Cord Cleat	Yes	No
1. Before today, have you ever seen a *cord cleat* before?		
2. Have you ever purchased or used the *cord cleat* device in your home?		
Notes:		

Cord Clip	Yes	No
1. Before today, have you ever seen a *cord clip* before?		
2. Have you ever purchased or used the *cord clip* device in your home?		
Notes:		

Cord Wrap	**Yes**	**No**
1. Before today, have you ever seen a *cord wrap* before?		
2. Have you ever purchased or used the *cord wrap* device in your home?		
Notes:		