

IMPROVING NEWBORN CAR SEAT SAFETY BEFORE HOSPITAL DISCHARGE

By

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Abstract

Background: A significant cause of infant and childhood injuries and mortality is motor vehicle accidents. Assessment and remediation studies have determined there are many common errors parents make regarding positioning of a newborn in a car safety seat (CSS). A multi-phased project was undertaken to determine CSS misuse rates at baseline and after implementing newborn CSS positioning educational strategies among parent/newborn dyads at a large urban 60-bed postpartum unit.

Method: A 12 registered nurse trained quality improvement team using a 7-point checklist, based on positioning recommendations from the American Academy of Pediatrics, conducted dyad assessments at baseline and phase I (N=192). In phase I, a step-by-step CSS positioning educational pamphlet was added to mothers' discharge teaching. In phase II, a CSS positioning YouTube demonstration video was designed, developed and evaluated by registered nurses working in the field of maternal-child health. Phase II data collection metrics included website viewing and educational tool evaluation of the CSS parental video in continuation of the Plan-Do-Study-Act process.

Results: At baseline CSS 7-point criteria was met by few (n=20; 20.8%) dyads with most dyads (n=76) demonstrating one or more positioning errors. Shoulder-strap misalignment was the highest criteria missed. After education, CSS criteria was met by 67 (69.8%) dyads. For phase II, the video was evaluated by 14 registered nurses, the rubric scores ranged from 92 to 100, with a mean score of 96.79%. Nurses determined the CSS educational pamphlet and video to be useful tools in parental education.

Conclusion: CSS positioning education at the point of care supports parent safety behaviors. At this facility, nursing staff are poised to implement video applications in their patient education.

However, further study would be necessary to measure pamphlet versus video education effectiveness.

Keywords: newborn, child passenger safety, injury prevention, safety policies

Introduction

Problem Description

A significant cause of infant and childhood injuries and mortality is motor vehicle accidents. In 2016, the age group 0-3 accounted for 21% of unrestrained passenger vehicle occupants who were killed, and it is estimated that car safety seats (CSSs) reduce the risk of fatal injury by 71% for children younger than 1 year of age (U.S. Department of Transportation, 2018). Assessment and remediation studies have determined there are many common errors parents make regarding positioning of a newborn in a car safety seat (Hoffman et al., 2014). Most recently, a study by Brown, Sinn, Chua, and Clarke demonstrated the quality of harness fit for newborns of low and normal weight was lacking in the immediate week following discharge (2017). Due to liability issues, hospitals are very cautious about child safety seat education and the assistance provided to parents (Rogers, Gallo, Saleheen, & Lapidus, 2013). However, information regarding car seat safety needs to be provided to prevent critical misuse errors from occurring that could lead to serious injury or death.

Although researchers have found that some degree of both postpartum education and support for correct CSS use for positioning can help families safely use their CSSs (Hoffman et al., 2016; Muller et al., 2016), there is no universal recommendation on what type of education to provide in order to close the gap in parent knowledge. Currently, hands-on demonstrations are not hospital policy and the institution's safety seat discharge language does not include any instructions on best CSS positioning. Additionally, there is no mandate that healthcare personnel become a *National Highway Traffic Safety Administration* certified Child Passenger Safety Technician (CPST). A CPST is a person who has been formally trained to assist parents or caregivers in properly installing and using car or booster seats. In most communities, child

passenger safety technicians work at formal inspection stations, not for hospitals (American Academy of Pediatrics [AAP], 2011).

Available Knowledge

There is a paucity of evidence related to assessing and remediating newborn positioning in a CSS. Hence, literature was reviewed for car seat and patient education standards, car seat safety assessment, and car seat safety parental education for the timeframe of 1991 – 2019.

Car seat and patient education standards. In 1991, the American Academy of Pediatrics (AAP) first recommended that hospitals set policies that require CSS education be completed before discharge and that newborns are to be discharged in a CSS. Then, in 1999, the AAP Committee on Injury, Violence, and Poison Prevention began publishing and frequently updating a Child Passenger Safety Policy Statement. A 2011 updated policy statement provided four evidence-based recommendations for best practices in the choice of a child restraint system, which includes; (a) most infants up to 2 years of age should ride in rear-facing CSSs; (b) forward-facing CSSs for most children through 4 years of age; (c) belt-positioning booster seats for most children through 8 years of age; and (d) lap-and-shoulder seat belts for all who have outgrown booster seats (AAP, 2011).

Additionally, in 2015, the AAP released a different policy statement regarding hospital stay for healthy term newborns which included specific criteria that should be met to ensure that discharge and subsequent follow-up for a newborn are appropriate (AAP, 2015). One of the seventeen principles in the policy statement stresses that a mother's knowledge, ability, and confidence to provide adequate care for her infant are documented by the fact that training and information has been received for several factors, one of which is appropriate use of a CSS (AAP, 2015). A second principle emphasizes that a mother needs to demonstrate to trained

hospital personnel appropriate infant positioning and use of a rear-facing CSS (AAP, 2015). The AAP's policy statement does not provide recommendations on what appropriate positioning of a newborn in a rear-facing CSS looks like nor does it state hospital personnel should complete a standardized National Highway Traffic Safety Administration course and that would allow them to then provide hands-on advice and guidance to families.

The AAP does have recommendations on what appropriate positioning of a newborn in a rear-facing CSS ought to be on their website healthychildren.org (AAP, 2019). These recommendations include the harness straps placed over a baby's shoulders and inserted into harness slots at a level this is at or below a baby's shoulders, the harness straps and chest clip buckled, and the level of the chest clip should be even with a baby's armpits (AAP, 2019). Additionally, the straps and chest clip lie flat against the child's chest and over his or her hips with no slack (AAP, 2019). If necessary, a tightly rolled small blanket can be placed on each side of a baby and/or a rolled washcloth between the crotch strap and a baby to create a secure fit until the baby grows to appropriate fit the CSS without the rolls (AAP, 2019). These recommendations are also available on patient education handouts, developed by the AAP, but are only available for print to subscribing customers only (AAP, 2019).

Furthermore, the Agency for Healthcare Research and Quality (AHRQ) has a guide that focuses on primary strategies for promoting patient/family engagement in hospital safety and quality of care (AHRQ, 2019). AHRQ aims to help patients, families, and health professionals work together as partners to promote improvements in care and some of AHRQ's guidelines include: (a) encouraging patients and family members to participate as advisors; (b) promoting better communication among patients, family members, and health care professionals from the point of admission; and (c) engaging patients and families in discharge planning (AHRQ, 2019).

By following the AHRQ recommendations and having education tools readily available that provide instruction regarding how to correctly position a newborn in a CSS, a postpartum unit experiencing the same clinical quality issue as the CSS education project should experience greater parent satisfaction in relation to the quality of CSS education communication the postpartum unit provides.

Car seat safety assessment and education. Rogers, Gallo and Saleheen conducted a study that was going to observe one hundred and one CSSs used at discharge, but they terminated their study early due to serious misuse of CSSs (2012). Rogers et al. (2013) were then able to conduct another study, in which nurses were required to complete a one-hour training/education program as well as perform two CSS demonstrations before the nurses provided CSS education and training to parents upon discharge. After CSS observations were completed, the parents were provided with verbal and written report of misuse and provided information about a CSS fitting station they should follow up with (Rogers et al., 2013).

Rogers and colleagues used a one-page flyer and a large in-room poster that explained correct CSS use and posted both of those in patients' room to facilitate CSS parent education. Unfortunately, Rogers et al. concluded nurse CSS education was unsuccessful in reducing CSS misuse (2013). Comparison of CSS misuse before (n=60) and after (n=70) observations resulted in a decrease in appropriate positioning use categories such as the harness slot level (95% vs. 87%), retainer clip level (63% vs. 33%) and harness snugness (50% vs. 27%). Alarming information that Rogers et al. (2013) concluded was that fitting instructions in CSS manuals are often ignored, which is in favor of a trial-and-error approach to safely positioning a newborn in a CSS and postpartum nurses may not be the best choice to provide CSS education. Hoffman, Gallardo & Carlson (2016) also conducted a study to estimate the prevalence of CSS misuse for

newborns at hospital discharge. Out of a total of 267 study participants, their study concluded 95% misuse of CSSs, of which securing newborns inappropriately in CSSs accounted for 86% of errors. Hoffman et al. (2016) reported the CSS error of "harness too loose" was found in 201 of their participants and the authors exclaimed increased postpartum education and support for correct CSS use can help families safely use CSSs.

Furthermore, a study conducted by Muller et al. involved the use of a car seat safety class to improve basic understanding of child passenger safety (2013). As part of their study, Muller and colleagues (2013) asked their parents participants two questions that relate to positioning of a child in a rear-facing CSS. These two pre- and post-test data questions stated, "What is the correct position of the retainer clip?" and "Where should the shoulder straps be on your child when rear-facing?" (Muller et al., 2013). Post-test data for both questions showed a significant increase in parental knowledge after the training class was provided because 69 parents knew before the class where the shoulder straps should be versus 197 parents knowing after the class. Muller et al. (2013) used multiple educational tools and concluded their interventions were effective at increasing parental knowledge about child passenger safety. The class was also followed by a discussion about class content, which Muller et al. believe may have resulted in greater retention of the CSS safety messages (2013).

In summary, the AAP has continued to issue statements regarding the need for CSS education and evaluation (AAP, 2011 & AAP, 2015). Improper positioning of newborns in CSS prior to hospital discharge has been documented by several randomized controlled trials (Rogers et al., 2013 & Hoffman et al., 2016). Although Rogers et al. (2013) did not conclude postpartum parent education was effective in remedying the problem of improper positioning, Hoffman et al. (2013) did conclude postpartum education can help families safely use CSSs. The newborn CSS

positioning quality improvement project outlined in this paper focused on two ways to educate parents during the postpartum hospitalization of their newborns.

Passive learning strategies. For this study, passive learning strategies were defined as interventions where parents would not need healthcare personnel present when learning about car seat safety. While it was recognized that passive learning was not as effective as active learning, the nurses used the CSS tools to reinforce learning and supplemented with CSS feedback, demonstration, and re-assessment. Hawkins and colleagues (2017) sought to meet patient education needs by developing a video application (app) that would increase their knowledge about psoriasis. Those patients participating in the web-based app scored higher on the knowledge assessment than did those using standard learning pamphlets. Kalat, Ramezani, Nabavi, and Saki (2019) found that the higher the patient's rated the patient education materials the higher hospital satisfaction they reported. Therefore, the video car seat safety parental educational tool was chosen for the continuation of the quality improvement project.

One form of passive learning is using a car seat user manual that is developed by the manufacturers. However, there is evidence that other forms of assistance can be more effective. In one study, researchers used HelpLightning- a phone/tablet application, and a car seat manufacturer's user manual to determine efficacy of car seat installation by young adults (ages 18-29) who had no previous experience installing car seats (Schwebel, Johnston, & Rouse, 2017). Participants were given 45 minutes to install the car seat and then secure an infant doll into the car seat using a 5-point harness, and the authors of the study suggested that communication by phone apps like HelpLightning and/or with a certified car seat installer are more effective than a user manual (Schwebel et al., 2017). A second passive education study researched access to the mobile health application 'Home-but not alone', an intervention used for

psychoeducation support, for 62 sets of parents in Singapore (Shorey, Ng, Danbjørg, Dennis, & Morelius, 2017). This study did not include information on CSS use but there was a significant improvement in the social support scores and parenting satisfaction scores from using the application intervention (Shorey et al., 2017).

During another randomized trial, Swartz et al. (2013) used a *Keeping Baby Safe In and Around the Car DVD* to educate parents on an individual basis, instead of a group setting. Participants completed a pretest and posttest vehicle safety knowledge quiz before and after they viewed the DVD. The vehicle safety knowledge quiz contained 11 multiple-choice questions and posttest simulation assessment also occurred that was graded on a scale of 0 to 7. In addition, participants in the treatment group also completed a user satisfaction questionnaire and rated their satisfaction with the program on a range of domains using a 5-point Likert scale (Swartz et al., 2013). Swartz and colleagues concluded viewing the DVD resulted in improvements in parents' car seat knowledge, and improvements in parents' ability to differentiate the critical elements of correct car seat use (2013). Among treatment condition parents who responded to user satisfaction questions, 96.7% of participants agreed the program was helpful.

Research Questions

To explore passive learning strategies that increase parental car seat safety knowledge and skills, the following research questions were developed: 1) Does passive car seat safety perinatal education increase the frequency of parents correctly using a car safety seat during first time use? and 2) Would maternal-child health nurses consider a car seat safety video, accessed through a mobile application, to be a useful car seat safety parental educational tool?

Rationale

According to The Commonwealth Fund, a strategy to improve care is to meet parents' informational needs and parents who report having their informational needs met are more likely to follow positive parenting behaviors than parents whose needs are not met (The Commonwealth Fund, 2019). Since formal policies would need to be in existence before any hands-on education could occur, the present research helped operationalize non-hands-on options that can be used, primarily by nurses, to meet the CSS educational needs of parents. The project was process-focused because it aimed to improve the quality of education provided, but the project was also outcome-focused because it aimed to increase parents' and nurses' knowledge/skills. The Theory of Planned Behavior (TPB) was the conceptual framework that used in this study. Proposed by Icek Ajzen, TPB is used to isolate the determinants of general human behaviors and was intended to explain all behaviors over which people can exert self-control (1991). According to Ajzen (1991), how strong an attempt an individual makes to engage in a behavior and how much control that individual has over the behavior are influential in whether he or she engages in the behavior. This construct, called perceived behavioral control, involves how people perceive the ease or difficulty of performing a behavior (Ajzen, 1991).

The education provided was based positioning recommendations provided by the American Academy of Pediatrics (AAP, 2019) and the hands-off education tactics encouraged prevention positive health behaviors. Since compliance with appropriate car seat use is at the individual level (parents), it was important to try and make the education as simplistic, streamlined and satisfactory as possible for parents to use and nurses to disseminate. Parents could then exercise control over when they intended to learn about car seat safety before being discharged from the postpartum unit. Nurses were going to be continuing to promote healthy car seat safety behaviors from the first use. However, they would be given an option on which

educational method they would desire more. That tied into TPB as the research basis because each nurse was able to view and determine how difficult teaching aid implementing would be for them.

Specific Aim

The overall aim of this study was to improve newborn CSS education tactics. Two passive parental educational strategies were selected by the author, a Registered Nurse, after several years' worth of misuse was observed on the maternal-newborn unit. A two-phase project began with determining outcomes of a ready-to-use educational handout (Car Seat Safety Parental Pamphlet) to educate parent(s). In phase II the Car Seat Safety (CSS) Video Education tool was evaluated by maternal child health nurses as a teaching tool alternative.

Phase I

The first phase involved development, implementation, and evaluation of a parent educational resource tool to provide concise CSS newborn placement knowledge on the day of hospital discharge. The objective of phase I of the study was to determine misuse occurrences and immediately remediate the situation. The investigator developed a one-page CSS parental educational pamphlet that contained detailed instructions on how to properly position a newborn in a CSS. Twelve registered nurses working on the postpartum unit volunteered to join the QI project team. The project goals, timeline, and data collection materials were reviewed.

The Car Safety Seat Parental Pamphlet (See Figure 1) is based on the AAP positioning recommendations (AAP, 2019). The pamphlet begins by having the parents review the inserted slot level of the harness straps, because once a baby is placed into a CSS there is no way to safely adjust the level of the harness straps. The pamphlet then provides a logical sequence on how to secure and infant. A panel of three nurse educator experts reviewed the CSS pamphlet for

readability and content validity. Minor revisions were incorporated, and a scale content validity was established (s-CVI = .90).

Phase II

Phase II was undertaken to review other ways to provide parents access to a prenatal point-of-care video CSS resource. The goal of Phase II was to explore parent education strategies to include the use visual education seen through a web-based application. The Car Seat Safety Parental Video (CSS Video) pamphlet can be found in Figure 2. The CSS Video pamphlet resource contained a link to a YouTube account, which contains video and audio of a registered nurse explaining how to appropriately place a newborn into a CSS. Over a one-week period, 14 maternal child health nurses participated in reviewing and evaluating the video using the CSS Video Evaluation Rubric (See Table 1).

Methods

With the CSS project focusing on education dissemination, there were many options to choose from on how to educate newborn patients' parents. Following the Plan-Do-Study-Act (PDSA) quality improvement process was important because the PDSA quality improvement methodology is the main methodology adopted by the Women's Center that the CSS education project was conducted on. The PDSA performance improvement framework model is a user-friendly system for individuals planning quality improvement projects (Stausmire & Ulrich, 2017). The PDSA model is ideal for an unpredictable and complex care environment, in which planned interventions do not always produce the desired results and need to be modified or changed completely (Stausmire & Ulrich, 2017).

Phase I

The study took place on a 60-bed Postpartum unit located in Central Texas. Twelve nurses who agreed to participate were instructed on how to gather baseline data, which meant they would be following the normal discharge process that only included verbal education after parents attempted to place/position their newborn correctly without any assistance from a nurse. Then, on the scheduled day of discharge, a 96 other newborns' parents were given the CSS Parental Pamphlet prior to placing their newborn into the CSS. During an average of two to four hours later, the nurses returned to complete the discharge process and verify the newborns' CSS positioning. During the safety checks, nurses would inspect the CSS fit as they normally would, and parents were given immediate verbal feedback on misuse and verbally instructed on how to correct their newborn's CSS fit.

Inclusion and exclusion criteria. Any type of adult caregiver situation was included (i.e., mother, father, grandparent, etc.) but their newborns were participants that were selected based on their weight and gestation. Newborns excluded were those who were born at less than 37.0 weeks and/or less than 2500 grams. The reason for exclusion was that those newborns undergo a car seat challenge study while hospitalized and newborns who undergo a car seat challenge have their car seat manipulated to an appropriately positioned point, by the nurses conducting the test. Additionally, participant's car seats must have been rear-facing infant stage only or convertible rear-facing (all-in-one that can be used beyond infant stage/can become a forward-facing car seat). The car seat must also not have been expired (car seats are recommended to not use after six years from manufacturer date) and must have all parts present or correct use would not be possible (harness chest clip, harness straps, etc.).

Data collection and analysis. The preintervention period for Phase I involved 12 nurses collecting the number of newborns who were incorrectly positioned in a CSS by their parents out

of a total of 96 newborn patients. The nurses were assigned the task of documenting positioning evaluations for 8 of their newborn patients that met inclusion criteria and were informed that meeting the seven-point CSS criteria constituted the parental outcome of “criteria met”; missing any of the criteria points was scored as “not met”. The nurses were instructed to keep a tally on a data collection chart that was located on the postpartum unit’s breakroom door. The chart had enough shift columns for nurses to be able to add their tally marks during or after every shift for a two-week timeframe.

The intervention period of phase I was then completed over another two-week timeframe, in which the CSS Parental Video pamphlet was implemented. The same nurses who helped during the preintervention period were then assigned the task of giving a pamphlet to parents whose newborn would be discharged during the day of the nurse’s shift. They were told the ideal time was when they were completing other discharge teaching. The nurses were instructed to tally as well as chose a one or multiple reasons for incorrect positioning on a new data collection chart that was located on the postpartum unit’s breakroom door.

Phase II

Continuing the Plan-Do-Study-Act process, the CSS Parental Video was developed in Phase II. The CSS Parental Video is an investigator developed three-minute video that describes and demonstrates car seat safety information, such as how to adjust the level of harness straps for rear-facing car safety seats, steps for putting a newborn into a car seat and extra positioning aids all of which were again based on AAP positioning recommendations. A newborn manikin and unexpired car seat were used for simulation purposes and the video was uploaded to a YouTube account, called CarSeatGuru. Then the CSS Parental Video pamphlet (See Table 2) included a short description, weblink, and Quick Response (QR) code reader.

Inclusion and exclusion criteria. Nurses excluded from Phase II were those that were still in their new hire orientation because they may or may not have received training on CSSs. Postpartum nurses were the only nurses asked to participate and most of the nurses who participated had been maternal-child nurses for several years. Due to differing schedules, only six of them also had participated in Phase I.

Data collection and analysis. Phase two was to develop, implement, and evaluate a brief CSS newborn positioning parent education tool delivered via video on YouTube. The fourteen maternal-child nurses were given their own copies of the Car Safety Seat Parental Education Pamphlet, the CSS Parental Video, and the CSS Video Evaluation Rubric. The nurses were told to look over the educational materials and watch the video before evaluating and scoring the seven performance level criteria of the video rubric. The outcome measure for phase II was the maternal nurse evaluation of the video using the CSS Video Evaluation Rubric. Descriptive statistics were used to analyze the results.

Results

The results of the CSS quality improvement project will be discussed by implementation phases.

Phase I. The first phase was to develop, implement, and evaluate the outcomes of a CSS newborn positioning parent education pamphlet for use on the day of hospital discharge. The tool was implemented to all patients that were discharging and assigned to the 12 nurses who were participating in the study (N=96), which was approximately 48% of the newborns who were discharged during the study timeframe. The nurse assessors reported 20 participants did not meet criteria, 67 or 48% correctly positioned their newborn in the CSS at discharge. The most common error was that the harness straps were too loose (thus too much slack and chest clip not lying flush against chest); other inappropriate position criteria that occurred were harness straps

not at or below level of baby's shoulders and inappropriate level of the harness chest retainer clip (below the armpit level). The CSS Parental Pamphlet was found to be useful and informative by the team of Postpartum nurses. The team also noted that the parent being taught often shared the pamphlet and knowledge with spouses/significant others, and other family members.

Phase II. Of the seven performance criteria, each criterion achieved a top rating score by at least one evaluator. The 'video content and organization' performance category is the only category that received the top rating score (10) by all the nurse evaluators. The maternal-child health nurses' consideration of usefulness was very positive, with the lowest, out of a possible 100 total score, being 92. Two participants scored all criteria as 100. When responding to the item, "When teaching or counseling parents, if given the option of using the car seat handout or car seat video", all of the participants chose to implement both teaching methods and thus allow the parents to decide which method they prefer to use for self-education.

Discussion

It is estimated that CSSs reduce the risk of fatal injury by 71% for children younger than one year of age (U.S. Department of Transportation, 2018). Ultimately it is parents' responsibility to place their child into the appropriate car seat for their child's age and size, but nurses providing guidance and support can go a long way in further preventing childhood injuries and death. It can be postulated that exposure to multiple car seat safety education techniques would be beneficial for expectant parents. The difficulty is narrowing down what education tactics to use and when to use them. Numerous U.S. hospitals have well-developed Child Passenger Safety (CPS) education and training programs using hospital staff who have been trained as CPS certified technicians. The results indicated that some degree of parental education is desired and would be welcomed among the maternal-child health nurses in charge of

implementing the additional teaching. Steps for implementation into a unit, related units (L&D or ER), and system wide would include efficient planning, training/education, and implementation. Healthcare personnel need to be informed of upcoming changes so that they can prepare themselves and a multidisciplinary team would be ideal.

The purpose of the current study was to show some form of active assistance, in the form of passive education, during the prenatal period and immediate postpartum period can be of some help to parents. Even though the interventions were not hands-on, they both allowed parents to obtain correct information on CSS use. Every hospital should ideally have protocols that require formal education be provided to parents, after birth, during the postpartum hospitalization period, by Women's Services nurses who are also *National Highway Traffic Safety Administration* Child Passenger Safety Technicians (CPST). Having a certified CPST would mean hands on education would be provided, which is most likely a more effective method than handouts/pamphlets. Having CPST technicians could also be used as a marketing tool that could attract potential clients to physicians who deliver at the Women's Services Department. When there is not protocols in place, nurses need to advocate for action to occur at the national, local and institutional levels.

Limitations

The tools used in the study had to be no cost. Therefore, a limitation was placed on what methods to use for intervention and might be reflected on the results of the study. Other criteria such as timeline, sampling method and population sample size were adequate, so no other limitations need to be disclosed. However, further studies are needed that would evaluate the CSS misuse rates when providing education by pamphlet versus video application.

Conclusion

Providing sound and accurate car seat education is the responsibility of healthcare providers because their main duty is health promotion. Currently, parents are basically relying on nurses to verbally communicate correct positioning immediately before a newborn is discharged, and that means nurse only have one chance to ensure parents are knowledgeable. Therefore, it is important that an effective and efficient approach is taken to help parents correctly position their newborns from the very first use of their newborns' car safety seat. The rationale behind a chosen educational strategy should be that they will be simple individualized educational interventions for teaching parents about positioning a newborn in a CSS. Child safety seat discharge education could ideally include a variety of written and visual aid instructions in order to maximize the chances that newborns are correctly positioned from the first use.

Implementation of CSS education policy will be crucial to implement, revise and sustain over time because it helps nurses provide high quality, patient-centered care. Parents being given educational tools can be empowering and help foster positive nurse-parent relationships and patient experience. Educating parents regarding correct newborn infant positioning could decrease morbidity and mortality throughout the lifespan of infants.

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Figure 1. Car Safety Seat Parental Education Pamphlet

How to Position Your Newborn in a Rear-Facing Car Safety Seat

1. Before placing your infant into the car seat, be sure the harnesses straps of your baby's car safety seat are in slots that will be at or below your baby's shoulder level. If needing to adjust the strap level, be sure to not twist the straps.
2. Place the straps over your baby's shoulders and then buckle the harness straps into the harness buckles. Buckle the harness chest retainer clip.
3. The straps then need to be tightened by pulling the adjustment strap that hangs down from the front of the car seat.
4. The harness straps are tightened appropriately when you are unable to pinch harness strap in any area.
5. The harness chest clip should lie flat against your baby's chest at the armpit level and only one finger should fit between the clip and your baby.
6. Aftermarket products such as headrest inserts are not permitted. You may use one that was part of your manufactured car seat.
7. If necessary, place ONE tightly rolled washcloth between the crotch strap and your baby to create a more secure fit.
8. If necessary, place ONE tightly rolled receiving blanket on the sides of your baby to create a more secure fit.



Note: The Car Safety Seat Parental Education Pamphlet was altered to conform to capstone paper formatting.

Figure 2. Car Safety Seat Parental Education Video pamphlet

Newborn Car Seat Positioning Demonstration Resource



Provided by Shelby Mowry, RN

For step-by-step instructions on how to position a newborn into a car seat please visit

CarSeatGuru's YouTube channel at: https://youtu.be/17xDU_-S59I

Or you can also use your cell phone camera to scan the below QR code for quicker access.



Figure 3. Evaluation Rubric for Car Seat Safety Video Project and One-Item Summary Question

Performance Level	Needs Improvement	Satisfactory	Excellent
Documentation	There is no documentation. 0 points	Most of the elements taken from car seat handout are documented; however, some documentation may be inaccurate or missing. 1-3 points	All elements from the car seat handout are accurately documented. 4-5 points
Subject Content	Subject knowledge is not evident. Information is confusing, incorrect, or flawed. 0-9 points	Subject knowledge is evident in much of the video. Most information is clear, appropriate, and correct. 10-20 points	Subject knowledge is evident throughout the video. All information is clear, appropriate and correct. 21-30 points
Video content and organization	The video lacks a central theme, clear point of view, and logical sequence of information. Much of the information is irrelevant to the overall message 0-2 points	Information is connected to a theme. Details are logical and information is relevant throughout most of the video 3-5 points	Video includes a clear statement of purpose. Events and messages are presented in a logical order, with relevant information that supports the video's main ideas. 6-10 points
Introduction	The introduction does not orient the viewer to what will follow. 0-1 points	The introduction is clear and coherent and evokes moderate interest/response from the viewer. 2-3 points	The introduction is motivating, and hooks the viewer from the beginning. 4-5 points
Mechanics	The text and audio have 4 or more grammar or spelling errors. 0-2 points	The text and audio have 1-2 grammar or spelling errors. 3-4 points	The text and audio have no grammar or spelling errors 5 points
Production	Video is of poor quality and is unedited. There are no transitions added or transitions are used so frequently that they detract from the video. There are no graphics. 0-10 points	Tape is edited. A variety of transitions are used and most transitions help tell the story. Most of video has good pacing and timing. Graphics are used appropriately. 11-15 points	Tape is edited. Video runs smoothly from shot to shot. A variety of transitions are used to assist in communicating the main idea. Shots and scenes work well together. Graphics explain and reinforce key points in the video. 16-20 points
Teaching Usability	I consider the video content lacking and would not use it at this point in teaching my patients about car seat safety.0-10 points	I consider the video content good and an acceptable in teaching patients about car seat safety. 11- 19 points	I consider the video content accurate and most useful in teaching patients about car seat safety. 20-25 points

Total			
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Summary Question:

1. When teaching or counseling parents, if given the option of using the car seat handout or car seat video: (circle one response)
 - a. I would prefer to use the Car Safety Seat Parental Education pamphlet
 - b. I would prefer to use the Car Seat Safety Parental video
 - c. I would use either one/let the parent(s) decide which method they wanted
