



POLICY BRIEF

THE USE OF BEHAVIORAL SKILLS TRAINING BY CERTIFIED CHILD PASSENGER SAFETY TECHNICIANS TO REDUCE CHILD RESTRAINT MISUSE

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Executive Summary

Motor vehicle occupant injury is one of the leading causes of fatality and hospitalizations for children in the United States. A primary contributing factor, is the long-term public health problem of child restraint system misuse. A recently published longitudinal study, by the Occupant Protection section of the 2014-2019 California Strategic Highway Safety Plan, demonstrated the effectiveness on the use of behavioral skills training to deliver standardized child passenger safety education to parents and caregivers by certified child passenger safety technicians. It was shown to improve educational objectives, resulting in sustaining correct use, thus reducing misuse. As a result of findings, the 2020-2024 Occupant Protection team developed a behavioral skills training, train-the-trainer protocol, and an outcome evaluation training protocol that will help to train child passenger safety technicians through continuing education credits with Safe Kids Worldwide certification. By training certified child passenger safety technicians with behavioral skills training and performing outcome evaluation, as a best practice recommendation by the National Highway Traffic Safety Administration, can improve educational objectives by technicians, sustain correct use and reduce misuse by parents and caregivers, and support Toward Zero Deaths National Strategy in the United States. This policy brief includes four policy/best practice recommendations.

Scope of Problem

Traffic safety professionals, are aware that motor vehicle occupant injury is among the leading cause of fatality and injury among children in the United States. Despite the best efforts of certified child passenger safety technicians and safety advocates, child restraint system misuse has remained a continued chronic public health problem since the early 2000s (Biagioli, 2002; Graham et al., 1992; Gunnip et al., 1987; Hoffman et al., 2016; Manary et al., 2019; Ramsey et al., 2000). Child restraint misuse is associated with increased risk of fatality and injury from motor vehicle occupant crashes.

Studies from car seat check-up events have determined child restraint misuse at 91% in rural and 83% in urban communities (Hafner et al., 2017). Further, studies report that 96% of parents are confident that their child restraint is correctly installed and used, but misuse remains over 50% (*NHTSA Highlights Importance of Car Seats and Child Passenger Safety*, 2020). Further, among parents of newborn babies, 95% have been found to be improperly restrained in their child restraint system after being discharged from the hospital (Hoffman et al., 2016).

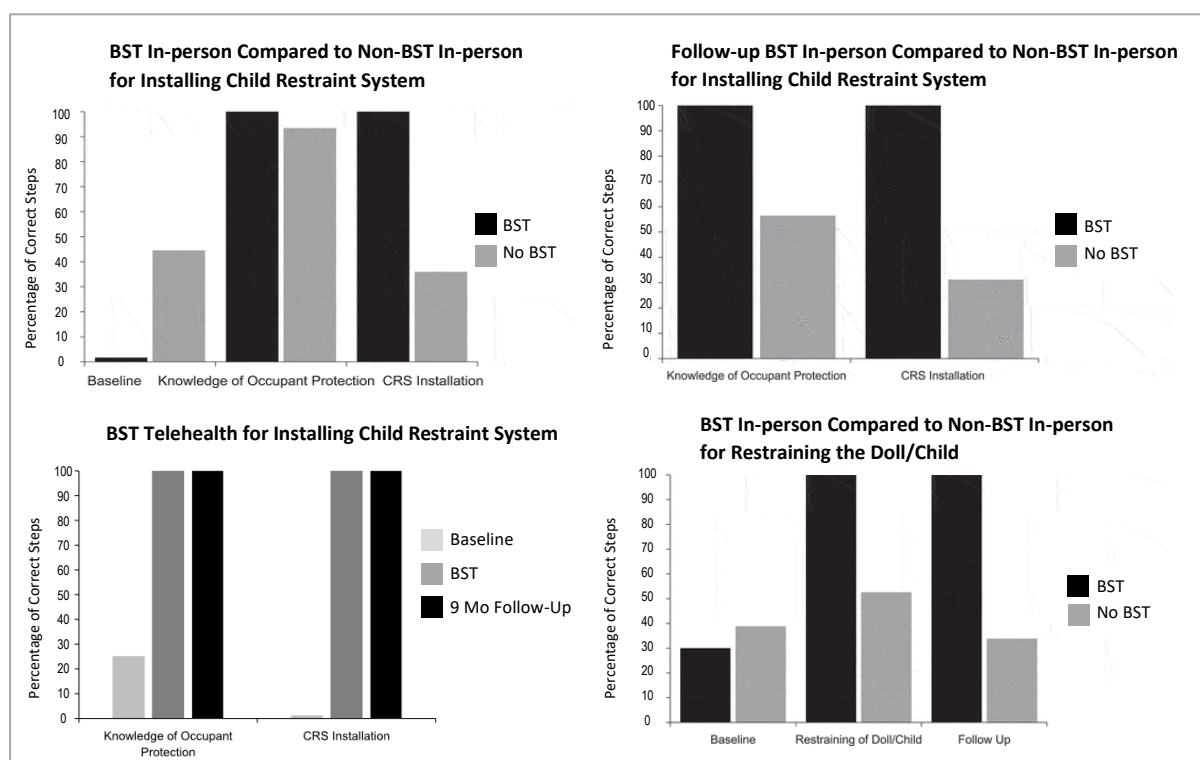
There is limited outcome evaluation of programs that provide car seat education to parents and caregivers at car seat fitting stations and check-up events. Without sufficient evidence on the impact of these educational services, results remain unknown of their impact to child restraint misuse.

Overview of Research

As part of the 2014-2019 California Strategic Highway Safety Plan, the Occupant Protection team assessed the efficacy of child passenger safety educational approaches in their ability to reduce child restraint misuse. The study aimed to answer three research questions: 1) Is the traditional child passenger safety educational method delivered by certified child passenger safety technicians effective in reducing child restraint system misuse over time? 2) Is behavioral skills training an effective method to deliver traditional child passenger safety education by a certified child passenger safety technician, to reduce child restraint system misuse compared to traditional child passenger safety education without behavioral skills training? And 3) Is a virtual telehealth version of behavioral skills training as effective as in-person behavioral skills training, in reducing child restraint system misuse? To answer these questions, a longitudinal quasi-experimental study of 2,448 expecting parents and their partners was conducted between June 1, 2015 and December 31, 2021. Participants were recruited from National Highway Traffic Safety Administration car seat inspection stations in the counties of Los Angeles, Ventura, Kern, Santa Barbara, Orange, Riverside, San Bernardino, and San Diego. Baseline, intervention/no-intervention, and 9-month evaluation was recorded by a 37-step task analysis and data analysed by the Department of Psychology at the University of Southern California.

The study found, when behavioral skills training was used by trained certified child passenger safety technicians to deliver standardized child passenger safety education, correct use was maintained at 9-month evaluation for both in-person and virtual telehealth versions of behavioral skills training. The study also validated the importance of outcome evaluation for car seat inspection stations and check-up events to ensure program objectives are shown to reduce misuse.

The following graphs provide a brief example of findings. It is recommended to read the results of the full study, published by Taylor & Francis in the *Journal of Organizational Behavior Management* on January 29, 2024, [“In-Person and Telehealth Behavioral Skills Training to Reduce Child Restraint System Misuse”](#) (DeCarli et al., 2024). For a pdf version, visit [Public Health Behavior Solutions](#), under Community Health and Safety Division.



Current and Proposed Policies

Certified Child Passenger Safety Technicians

Certified child passenger safety technicians are trained to execute the national standardized curriculum, administered by Safe Kids Worldwide, to educate parents and caregivers on the proper installation and use of their child restraint system to reduce misuse. Safe Kids Worldwide certifies child passenger safety technicians, provides continuing education credit classes, and requires recertification for technicians every two years.

Safe Systems Approach/Toward Zero Deaths National Strategy

As a contribution to the Safe Systems Approach, certified child passenger safety technicians educate parents and other caregivers to improve their ability to use safety equipment properly, such as installation and use of child restraint systems to reduce the impact of physical forces that are tolerated by the child-human body (Ritter et al., 2022).

State agencies develop highway safety plans to reach zero deaths on roadways in the United States, as an effort to support Toward Zero Deaths National Strategy (Federal Highway Administration, 2014).

Proposed Policy Overview

The effectiveness of behavioral skills training to help reduce child restraint misuse, provides an opportunity to train technicians to use behavioral skills training to deliver education to parents and caregivers. As a result of the longitudinal study, the California Strategic Highway Safety Plan, Occupant Protection team, have been developed a behavioral skills training, train-the-trainer model, and an outcome evaluation training protocol, to train certified child passenger safety technicians with behavioral skills training as continuing education credit classes through Safe Kids Worldwide. This California model has been developed to improve child passenger safety educational approaches in-person and remotely, to reduce child restraint misuse. This model, as a best practice recommendation that can be used by certified technicians in other states, United States territories, and tribal and military communities.

Policy Recommendations

To achieve Toward Zero Deaths under the National Strategy, child restraint system misuse must be addressed, and National Highway Traffic Safety Administration car seat fitting stations and related check-up events should be routinely evaluated to assess their ability to reduce misuse. This will improve state agency traffic safety grant objectives, to ensure efficacy and reduce misuse. Studies have validated that when child passengers are restrained properly in a correctly installed child restraint system, fatality risk is reduced by 71% for infant's younger than 1 year, and 54% for ages 1 to 4 years (National Highway Traffic Safety Administration, 2022). To reach Toward Zero Deaths, this policy brief includes four recommendations.

1). Incorporate a continuing education credit class that trains certified child passenger safety technicians to use behavioral skills training to deliver child passenger safety education to parents and caregivers (Safe Kids Worldwide)

To ensure correct use of child restraints, the educational approach must be able to effectively transfer the complex skills from the certified child passenger safety technician to the parent or caregiver, to install and use a child restraint system correctly. Behavioral skills training has been

validated as an effective approach to transfer complex skills and sustain these skills to reduce misuse. Whereas, the use of behavioral skills training by certified child passenger safety technicians when teaching parents and caregivers, was found to be statistically significant in reducing child restraint misuse (DeCarli et al., 2024). The study also validated that both in-person and virtual telehealth versions of behavioral skills training is associated with long-term effectiveness (up to 9-months), in reducing child restraint misuse. Policy implications for practice can improve the effectiveness of child passenger educational services and programs. DeCarli et al. (2024) found that participants who were trained by a certified technician without behavioral skills training, even though they were able to install their child restraint system after the training session, skills were not maintained over time resulting in misuse at 9-month evaluation. Among participants who received education by a certified technician who was trained in using behavioral skills training, for both in-person and virtual telehealth, critical skills were maintained resulting in zero misuse at during 9-month follow-up evaluation. By applying child restraint education with behavioral skills training by certified technicians is associated with reducing misuse, and saving the lives of child occupants.

The current 2020-2024 California Strategic Highway Safety Plan has developed a behavioral skills training, training protocol to train certified child passenger safety technicians to effectively use behavioral skills training to deliver the national standardized curriculum to reduce misuse. Incorporating a behavioral skills training for certified technicians as a continuing education credit certification class provided by Safe Kids Worldwide, provides an opportunity for certified technicians to improve their ability to effectively train parents and caregivers.

2). Establish a best practice recommendation that encourages the use of behavioral skills training to be used by certified child passenger safety technicians when delivering child passenger safety education to parents and caregivers (National Highway Traffic Safety Administration).

By recommending the use behavioral skills training by certified child passenger safety technicians, will help to reduce the long-term public health problem of child restraint system misuse, and contribute to achieving Toward Zero Deaths National Strategy.

3). Develop a best practice recommendation that requires outcome evaluation to traffic safety, occupant protection education-related grants that are provided to state agencies (National Highway Traffic Safety Administration).

DeCarli, et al. (2024) documented the importance of program (outcome) evaluation. As part of the 2020-2024 California Strategic Highway Safety Plan, the Occupant Protection team has established an outcome evaluation protocol that can be used for state occupant protection grantees. This will ensure that educational-related traffic safety programs, such as car seat distribution and educational programs, and fitting stations are evidence-based by validating the reduction of child restraint system misuse, and contribute Toward Zero Deaths National Strategy.

4). Establish a best practice recommendation that encourages routine outcome evaluation of National Highway Traffic Safety Administration car seat inspection stations to ensure program efforts are reducing child restraint system misuse (National Highway Traffic Safety Administration).

As demonstrated by DeCarli, et al. (2024) outcome evaluation is necessary to ensure that educational objectives are met and shown to reduce child restraint system misuse. The same outcome evaluation protocol, discussed in the previous recommendation, can be used for routine outcome evaluation to validate its effectiveness in the reduction of child restraint system misuse, and contribute Toward Zero Deaths National Strategy.

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