

〔資料〕

## An Exploratory Comparative Study of the Promotion of Child Restraint Seat Use In Japan

Mellisa Ogasawara<sup>1)</sup>, Atsuko Chiba<sup>1)</sup>, Kie Kawauchi<sup>1)</sup>

1) Aomori University of Health and Welfare

### Abstract

The rate of use for child restraint seats (CRSs) in Japan is significantly lower than in other developed countries. Fifteen years after the introduction of compulsory restraint seat use, the national rate is 62.7% compared with over 90% experienced in other countries such as Australia, the U.K and Sweden. The low level of use in Japan is a serious concern, and it raises questions about the promotional methods used to increase public awareness of the risks associated with non-use and misuse of CRSs. This preliminary study was aimed at identifying the key differences in methods used in promoting CRS use in Japan with those used in countries that have high levels of restraint seat use. It was found that current methods used for promoting CRS use in Japan are significantly different, and the findings clearly illustrate Japan's promotion of and research into safety seat use lag behind promotion and research in other developed nations. It is hoped that the findings in this preliminary study help to lay the groundwork that will lead to more in-depth investigations into how Japan can develop future campaigns that are more effective in changing people's attitudes and behavior towards the use of child restraint seats so that the safety of all children at all times is ensured.

**Keywords:** child restraint seats, low level of use, parental knowledge and attitudes, promotional methods, behavior change

### Introduction

Since April 2000, the law in Japan has required that children under the age of 6 years be restrained in a child restraint seat (CRS). The introduction of compulsory CRSs resulted in an increase in use rates from approximately 15.1% in 1999 to 39.9% in 2000<sup>1)</sup>. However, despite 15 years of annual road safety campaigns promoting use, the rate of use in 2015 was only 62.7%<sup>1)</sup>. Furthermore, annual surveys<sup>1)</sup> by the National Police Agency (NPA) & Japan Automobile Federation (JAF) and a 2014 investigation by the Institute for Traffic Accident Research and Data Analysis (ITARDA)<sup>2)</sup> have found high levels of incorrect use of safety seats, resulting in limited protection for children in the event of an accident. On the other hand, CRS use rates in many developed countries, such as Australia, the U.K and Sweden, are over 90%<sup>3-5)</sup>. The low level of use in Japan is a serious concern, and it raises questions about the promotional methods used to increase public awareness of the risks associated with non-use and misuse of CRSs.

### Purpose

The purpose of this exploratory study was to compare the methods used in promoting CRS use in Japan with those used in countries that have high levels of restraint seat use. Specifically, the availability of promotional resources for use, components of educational programs aimed at increasing awareness and use of restraint seats, and the use of mass media campaigns were examined to gain insight into the theoretical basis of the approaches. This is a preliminary study aimed at identifying the key differences in methods used so as to establish an understanding of how best to proceed with future investigations of CRS promotion in Japan.

### Background

The number one cause of death for Japanese children aged between 1-9 is unforeseen accidents and half of these are traffic related<sup>6)</sup>. 71% of children under 6 years of age whom are killed or injured in traffic accidents are passengers, most commonly traveling in a family-owned car<sup>2)</sup>. Unrestrained children are 3 times more likely to be killed or injured than restrained children, and incorrectly restrained children are 5.4

times more likely to be killed or injured than those correctly restrained<sup>7)</sup>. Research and data conclusively show the safety benefits of child restraint seat use; however, an annual investigation into child safety seat usage for children by the NPA and JAF revealed that in 2015 62.7% of Japanese children between 0-5 were restrained in a safety seat<sup>1)</sup>. The usage rate for infants was much higher at 85.2%, while only 64.4% of children aged 1-4 were restrained. However, an alarmingly low 38.1% of 4-5 year olds used a restraint seat. A breakdown of non-use reveals that 7.2% of children under 6 were using an adult seatbelt. JAF<sup>8)</sup> recommends children under 140 centimeters be placed in a booster seat which raises the child's body to a height suitable for adult seat belt use. At the appropriate height, the belt fits across the pelvis and collarbone rather than the stomach and neck, which dramatically increases the risk of neck and lumbar injuries. A further 5.4% were seated on an adult's lap. Evidence<sup>9)</sup> shows that at a speed of 50 kilometers per hour, body weight increases thirtyfold on impact. A child weighing 10 kilograms becomes 300 kilograms, making it impossible for an adult to hold on to the child in the event of a crash or hard braking. Another 4% of children were placed in a CRS but were unbelted, and 20.7% were unrestrained. This leaves 30.1% (adult's lap, unbelted, unrestrained) of children completely unprotected in the event of an accident. Additionally, the survey found that 60.5% of seats were not correctly installed and 39.6% of children were incorrectly restrained, increasing the risk of injury or death<sup>7)</sup>. These statistics show that there is currently inadequate use of restraint seats in Japan.

Results from the limited number of studies into child restraint seat use in Japan indicate that both inadequate knowledge regarding the risks of non-use and everyday experiences related to restraint seat use appear to be the major factors associated with the low level of safety seat use. A 2008<sup>10)</sup> study found that daily experiences related to safety seat use might be more influential in determining use than actual knowledge of CRSs effectiveness. Daily experiences refer to: feeling hassled by child restraint seat use on short drives; a feeling of not needing to use a seat when another adult is in the car; and child resistance. Other studies<sup>11)12)</sup> also report child resistance, feeling hassled and short distances to be the main causes for non-use of a child seat. These studies<sup>10)11)12)</sup> also show that misperception of the safety benefits of restraint seats translated to non-use. Specifically, a high number of respondents believed that there is no significant difference in the death rates of children in accidents between when CRSs are used and when they are not used<sup>10)</sup>. In addition, all the studies

found that parents who did not use a safety seat on short-distance trips, such as to the supermarket, to daycare or visiting people, perceived the threat of injury to be low because they were driving at low-speed and only a short distance. Kakefuda<sup>10)</sup> et al conclude that even when knowledge level is high regarding child occupant safety, perceptions toward child occupant injury as a threat appear to be biased. Parents who underestimate the risk of injury or death occurring on short distance trips and who feel hassled to buckle up a child whom is resisting, are highly likely to choose non-use over use. From this information, it is possible to surmise that these combined attributes are a leading cause of Japan's low-level of CRS use.

While there has been a slight increase in usage each year since the introduction of legislation, the rate of use remains comparatively low internationally, suggesting there is a clear need for better promotion of awareness and use within Japan. General efforts to promote road safety in Japan appear to be less committed than in other developed countries. For example, the UN designated 2011-2020 as A Decade of Action for Road Safety<sup>13)</sup>, so, in cooperation with this, many countries around the world established new road safety campaigns and initiatives. Seventeen events were planned in the United Kingdom, 7 in Australia, and 22 in the United States, with most events coordinated by government and national organisations. However, in Japan, only one event was registered with the UN. The Inochi Museum, a non-profit organization, announced that it would post special announcements to make people aware of this international action. Furthermore, from the author's personal perspective, there is a noticeable difference in the amount of road safety advertising and promotion in Japan and in Australia. The Australian public is constantly bombarded with images and messages tackling all areas of road safety, including the use of CRSs, whereas, in Japan, there appear to be no high-profile campaigns encouraging the public to change their behavior.

### **Promotion of child restraint seats in Japan**

A search of the literature and information from various road safety promotion organisations uncovered three significant characteristics of CRS promotion in Japan. First, the selection of promotional resources available, such as DVDs and brochures, is disproportionately low compared with other road safety promotion themes like speeding, drink driving and crossing the road. Second, no evidence could be found of education programs aimed at increasing awareness and/or use of CRSs. Third, message content and style of promotional materials do not appear to be grounded in

the same theories of behaviour change and health promotion as those used in overseas' health advertising campaigns.

A search of the websites of three major road safety promotion organizations, JAF<sup>14)</sup>, the Japan Traffic Safety Association<sup>15)</sup> and the Japan Traffic Safety Education Association<sup>16)</sup>, found an extremely limited supply of promotional resources produced by each organization. Specifically, a search of the JAF homepage found that, out of 66 videos on JAF's two road safety channels, 10 were about child seats. JAF's focus appears to be on producing crash-test videos to provide evidence of the safety benefits of restraint seats; however, this video evidence does not seem to be promoted in other mediums more likely to reach the public, such as posters, billboards or TV commercials, for which none could be found online. The Japan Traffic Safety Association publishes various educational materials promoting safety. Of the 15 safety pamphlets available for purchase, none were specifically about CRSs. The Japan Traffic Safety Education Association, a centralized coordinating agency for other regional, prefectural, and local traffic safety associations throughout Japan, produces various pamphlets, leaflets and comic books on road safety education. A look at materials for young and school-aged children revealed nothing specifically about safety seats, and, in materials aimed at adults and the general public, there was one booklet about CRSs. Finally, out of the 42 videos available for sale by the Japan Traffic Safety Education Association, none were about safety seats. In short, the main road safety organisations in Japan do not appear to be strongly promoting the use of child restraint seats.

A literature review conducted in 2014<sup>17)</sup> uncovered an absence of studies into CRS educational programs in Japan. In addition, a review of two leading search engines, Yahoo Japan and Google, was also carried out using a combination of the following keywords: child seat [チャイルドシート], use [使用], education program [介入プログラム・教育プログラ

ム]. As with the literature review, the online search did not uncover any information concerning CRS education programs of any type. While these two reviews alone are not conclusive evidence, the results suggest that there may be no such interventions in Japan, or, if there are, there are currently no published studies of them.

Theories and application for health promotion in Japan suggest that, in cases where the person is uninterested in changing their behavior or they feel that there is nothing wrong with what they are doing, as is the case for many parents who do not correctly place their child in a restraint seat, it is best to use what is termed a *positive approach* [gain-framing]<sup>18)</sup>. The positive approach pursues the issue in terms of the benefits the person will get from discontinuing the unhealthy behavior; thus, promotional materials and health advertising in Japan tend to use language that has positive nuances or shows the benefits of adopting a healthier choice. The following is a selection of slogans used by the Japan Traffic Safety Association<sup>15)</sup> to promote child safety seats : 1) 2014 発進はチャイルドシートの笑顔見て[See a smiling face in the child seat when you drive off]; 2) 2013 安心とわが子をつなぐ チャイルドシート[A child seat connects my peace of mind with my child]; 3) 2006 抱っこより 安心安全 チャイルドシート[A child seat is more safe and secure than holding them]; 4) 1996 帰り道 かわいい寝顔 チャイルドシート[See your child's cute face in the child seat on the way home]. The messages tend to feel warm and appeal to a parent's love for their child. Another central element of health advertising is image type. Images used in promotional materials in Japan can be categorized in to 2 types: 1) manga style, showing smiling babies, children and parents; 2) famous faces, also smiling.

The means of communication commonly used to promote CRS in Japan tend to be low cost, low profile methods such as brochures, flyers, small-sized posters, banners, etc. An online search of JAF, prefectural

IMAGE 1<sup>19)</sup>



IMAGE 2<sup>19)</sup>



IMAGE 3<sup>20)</sup>



IMAGE 4<sup>21)</sup>



police agencies and traffic associations located only one television commercial which was a 30 second commercial used in Tottori prefecture in 2013 during the Autumn road safety campaign. Furthermore, the author recalls, in 17 years of living in Japan, having never seen a CRS commercial.

Promotion of safety seat awareness and use appears to be a minor component of overall road safety promotion in Japan; informational resources are limited, there is no evidence of any significant kind of education program, and the underutilization of mass media is evident.

### **Promotion of child restraint seats in other developed countries**

A search of the literature and various road and child safety promotion organisations overseas uncovered an abundance of research and information. The review found that most Western countries have been aggressively promoting the benefits of CRS use for decades and, these countries experience high levels of use. Government agencies at national, state and local levels, and road and child safety associations produce various types of informational, educational, and promotional materials. Efforts to increase appropriate use of safety seats appear to be extensive and the use of comprehensive interventions is common.

There is a plethora of information and resources on the importance of using child restraint seats produced by government and private associations available either online or by ordering. One such organization is Safety Belt Safe U.S.A.<sup>22)</sup>, which provides regularly updated materials for use by professionals, advocates and parents. There are approximately 60 different materials available online for free and the content is varied: a quick checklist for safety seat use; booster seats are for big kids; ideas for PTA groups to promote car safety for children; and a summary of California Occupant Protection Laws. Such organisations are common in countries where child occupant safety is high on the agenda of overall road safety initiatives.

Unlike in Japan, a search of education programs and promotional campaigns produced an extensive number of studies, some dating back to the 1980's, and most contained more than one type of intervention. Published studies<sup>23-25)</sup> of education programs or reviews of the effectiveness of programs list the following types of commonly adopted interventions: 1) curricula targeted at children in preschool; 2) counseling or education sessions with parents; 3) demonstrations of correct car seat usage to parents; 4) distribution of educational materials

(pamphlets, posters, films); 5) home visits by designated health care personnel; 6) health care provider messages during clinic visits; 7) mass media campaigns; 8) incentive programs with prizes or rewards; 9) car seat loaner or rental programs; 10) coercive programs with negative enforcement (excluding police or legal interventions); 11) institutional policies providing guidelines for parents to follow (e.g. daycare policy that all children must be in a car seat); 12) newspaper articles and editorials; and 13) displays of safety seats in public locations. Many studies are enhanced education programs meaning they incorporate more than one intervention type into a program. The following are examples of overseas education programs.

Example 1: The Buckle-Up Safely program consisted of a workshop for educators, distribution of printed materials, parent information sessions (educational DVD), supply of child restraints at subsidized cost, and free restraint checks (voucher)<sup>26)</sup>.

Example 2: A comprehensive broad-based community education program targeted at both parents and children, which included: newspaper articles; organization and group newsletters; a website; tip sheets and brochures; telephone information line; resource kits for preschools and health care providers; radio and television announcements; and local news reports. Discount booster seat vouchers were also provided and car seat training programs were provided for health care providers, childcare providers and educators, law enforcement, emergency services personnel, and child safety advocates<sup>27)</sup>.

Example 3: A community-based social marketing campaign called "Boosting Restraint Norms" developed community outreach kits which included a 3-minute video for parents called *No Regrets*, brochures, audio public service announcements, posters, active displays, and flyers that were delivered to community groups, schools, and parents for use by parents. Other broad community outreach efforts included: 1) placing posters in locations identified by the project partners as "high traffic" (beauty salons, health departments, and faith-based organizations); 2) conducting educational sessions with parents at schools and day cares; and 3) disseminating audio and print news releases. In addition, a well-publicized, one-time event occurred at a local fire department where the first 250 attendees received a free booster seat after watching the *No Regrets* video<sup>28)</sup>.

These examples show evidence of integrated programs employing numerous interventions simultaneously. Zaza et al's<sup>25)</sup> comprehensive review of interventions to increase use of child safety seats found strong evidence of effectiveness for child safety seat

IMAGE 5<sup>31)</sup>



IMAGE 6<sup>32)</sup>



IMAGE 7<sup>33)</sup>



laws and distribution plus education programs. In addition, community-wide information plus enhanced enforcement campaigns and incentive plus education programs had sufficient evidence of effectiveness. Insufficient evidence was identified for education-only programs. Ehiri et al's<sup>23)</sup> review of interventions for promoting booster seats found that combining incentives (booster seat discount coupons or gift certificates) or distribution with education demonstrated marked beneficial outcomes for acquisition and use of booster seats. This analysis of education programs used in countries with high levels of CRS use revealed extensive research into a variety of programs focused on different aspects of CRS use. It also found that, in line with best practices in CRS promotion, education programs are comprehensive and enhanced to include a combination of interventions.

There is also a considerable number of studies into the effectiveness of mass media campaigns in increasing CRS use rates. Overseas' research shows that mass media campaigns play a valuable role in promoting safe behaviours<sup>29)</sup>. Accordingly, health advertising is used extensively to promote various issues, including the use of CRSs. An analysis of previous mass media campaigns and campaigns with media components found that the message content and style, and means of communication used are markedly different to those used in Japan. Many Western countries utilize a negative approach [loss framing], and the use of threat appeals and fear arousal in road safety campaigns has been common practice for decades. Delaney et al.<sup>30)</sup> found that among the behavior change theories they reviewed, "those with the greatest applicability to the development of road safety mass media campaigns were Roger's Protection Motivation Theory and Extended Parallel Process model, both of which utilise concepts of fear arousal, coping responses and self-efficacy". In general, campaigns employ a loss framing approach and use emotion, fear and shock to deliver messages to the audience. Furthermore, messages often appeal to

people's sense of responsibility or play on their guilt. The following is a selection of slogans used in overseas' campaigns: 1) NO Child Car Seat. NO Excuse; 2) Don't let your next drive be your child's last; 3) Will your child survive a crash?; 4) You are your child's best protection against injury! 5) Mummy, please don't end my life before it begins.

A review of educational programs and mass media interventions, as well as an online search found that images used in Western countries were almost always of real people presenting the negative outcomes of not using or inappropriately using a safety seat. See images 5,6,7. Often, images are quite graphic or very emotive such as in the campaign produced in Canada showing a hearse with the sign *Child on Board* in the back window(image 5).

Will, Sabo & Porter<sup>34)</sup> incorporated a threat-appeal approach in an education program intended for caregivers and aimed at increasing their risk perception. They produced a 6-minute video which included: (a) images that evoke high emotion; (b) crash-test footage and computer-generated simulations to portray powerful crashes; (c) case stories; (d) specific consequences to noncompliance; (e) well-respected experts to deliver messages. The study's results found significant increases in "parents' child passenger safety knowledge, risk-reduction attitudes, behavioral intentions, sense of fear related to the hazard, and sense of efficacy related to the recommended behaviors. Furthermore, observed overall restraint use and booster seat use increased significantly following the intervention"<sup>34)</sup>.

As previously mentioned, the means of communication used to promote CRS in Japan were listed as low cost, low profile methods such as brochures, flyers, small-sized posters, banners, etc. In contrast, campaigns in other developed countries often include high cost modes such as TV commercials, radio announcements, newspaper and magazine advertisements and billboards. TV commercials and billboards are the most commonly used methods in CRS

campaigns overseas. In the past, TV commercials have almost always used threat-appeals and the content was graphic and/or emotive. Radio announcements are also cleverly used. Research suggests that for maximum impact, advertising needs to be close to the point of impulse, which means that the audience should see or hear the advertisement at the time in which they are engaged in the undesirable behavior<sup>29)</sup>. Therefore, CRS radio announcements are usually aired in the mornings and afternoons at school drop-off and pick-up times.

Promotion of CRS awareness and use in other developed countries appears to be widespread and takes place at the national, state and local level. Furthermore, education programs and mass media campaigns are based on theories of behavior change and health promotion.

### **Discussion and comparative analysis**

This investigation found that current methods used for promoting CRS use in Japan are significantly different to those used in countries with high levels of restraint seat use. Furthermore, the findings clearly illustrate Japan's promotion of and research into safety seat use lag behind other developed nations. This study focused on three areas of promotion: information and resources, education programs and mass media. Major differences in all areas were identified.

The availability of information and resources, specifically the quantity of resources, available through government or road safety organisations in Japan was extremely limited, and there appears to be much less focus on increasing awareness and use of CRSs compared with other road safety issues such as speeding, drink-driving, crossing the road, etc. On the other hand, in many other developed countries, there are many resources available for various purposes in promoting CRS use. Government agencies and road safety associations appear to play an integral role in the dissemination of information to both professionals and the public. Making these kinds of resources openly accessible inevitably enables easier and better promotion of CRS use within the community.

A lack of education programs and/or publication of such programs was apparent in Japan. Essentially, no information could be found outlining an education program for increasing awareness or use of safety seats in Japan. On the contrary, other developed nations have been conducting and evaluating intervention programs for many years, and results indicate enhanced education programs obtain the best outcomes in terms of increased use or correct use. The types of programs vary greatly as do the results of studies. However, recommended and empirically

supported interventions for child passenger safety include laws, enforcement, and enhanced education programs [e.g., distribution plus education, enforcement plus education, incentive plus education]<sup>34)</sup>. The design and implementation of campaigns generally involve numerous community organizations and government agencies such as public safety and public health offices, schools, advocacy organizations, and parent groups<sup>25)</sup>.

The use of mass media campaigns by Western nations is extensive and the means of communication used generally included high cost, high profile types such as television commercials and billboards. In comparison, it was found that Japan's media was restricted to brochures, small-sized posters, banners, etc. "One of the most basic issues in considering campaign characteristics is the choice of appropriate media, which can include television, radio, press advertising, cinema advertising, and brochures. Television has generally been considered the most persuasive medium"<sup>30)</sup>. In addition, research suggests that the means of communication greatly impacts on the frequency of exposure<sup>22)</sup>. This suggests that by restricting advertising to the use of flyers, banners and the like, as is the case in Japan, it significantly reduces the chance of exposure which in turn impacts on the effectiveness of the campaign.

Another distinction between media campaigns in Japan and Western countries was in the approaches used in devising messages. Western countries are more likely to select a loss-framing message, which highlights the costs of continuing the unhealthy behavior, whereas Japan tends to adopt gain-framing messages, which emphasize the benefits of ceasing the inappropriate behavior. While general research into the effectiveness of gain and loss framing is contradictory, threat-appeals, which inherently have a loss-framing message, have been commonly used for CRS promotion overseas in the past. Delaney et al.'s<sup>30)</sup> comprehensive review of mass media campaigns in road safety concluded that, "An emotive and negative approach was generally considered more appropriate in road safety advertising." Furthermore, a review<sup>29)</sup> of best practice in road safety mass media found that advertising campaigns should be realistic, convincing and not apologetic, and contain as much emotion as possible. This study found that messages and images used in Japan do not incorporate these elements. Japan's use of manga style pictures combined with gain-framing messages such as, *See your child's cute face in the child seat on the way home*, are in stark contrast to the messages and images used in threat-appeal campaigns in other developed countries.

In South Africa, where the road death toll is extremely high, one province tested the high fear road

safety advertising approach and had great success. While the project was not aimed at child safety seats, it was about road safety – drinking and driving and speeding. The KwaZulu Natal province in South Africa combined dramatic television advertising (adapted from Australian emotional advertisements) with strong law enforcement. In the 2-year period following the campaign there was a 35% reduction in road fatalities in the province compared with 17% for the rest of the country, which primarily relied on enforcement only<sup>35</sup>. It must be noted that studies<sup>36</sup> are emerging in Western countries that suggest threat-appeal messages are not as effective as previously thought; however, research to date has provided evidence that well-planned, targeted campaigns do produce varying degrees of success in Western cultures. No evidence could be found of studies evaluating the effectiveness of high fear road safety advertising in Asian countries. Similar pioneering studies in Japan could help to identify the potential of threat-appeals in changing Japanese' behaviour.

This paper aimed to explore the differences in methods used to promote CRS use in Japan and other developed countries. In order to increase awareness and use of safety seats, it appears that government bodies and road safety organizations need to include child occupant safety more prominently in their overall road safety promotion. Furthermore, Japan needs to begin developing its own education programs and subsequently produce research into the effectiveness of such programs. Finally, Japan needs to rethink the content, means and frequency of communication in campaigns. A large body of international literature concludes that campaigns with a persuasive orientation and those that use emotional rather than rational appeals tend to have a greater effect on a change in behavior. Government bodies and local communities in Japan could try adopting negatively framed messages and incorporate the use of TV commercials, radio announcements, billboards and social media into their efforts to educate people on the dangers of misuse and non-use. Evidence shows that exposure to the message is a key element in affecting behavior change. Thus, a change in the means of communication would greatly increase the frequency of exposure to the message. Although mass media campaigns using a negative approach have been shown to be successful time and again overseas, comprehensive and meaningful research is needed to evaluate how effective such messages are in changing Japanese families' attitudes towards the use of CRSs, given the difference in culture.

## Conclusion

Traffic accidents are a leading cause of injury and death among young Japanese children, yet the rate of CRS use is still extremely low compared with other developed nations. Information gathered in this study

indicates that Japan needs to broaden its promotional methods used in advocating the use of safety seats. It seems necessary for Japan to follow the lead of other countries in being more aggressive in promotional strategies. Different methods are needed to provide caregivers with the necessary knowledge that will motivate them into correctly using an appropriate restraint for their child. While overseas research continues to evaluate the long-term effectiveness of interventions, the large body of existing research clearly indicates that mass media campaigns and enhanced education programs at the community level generate modest levels of changes in behaviour. Furthermore, after decades of such interventions, CRS use rates remain high. On the other hand, 15 years after the enactment of the compulsory CRS law, the rate of use in Japan remains comparatively low at 62.7%. Keay et al.<sup>37</sup> stated that, "experience from high income countries indicates that it takes coordinated, concentrated and ongoing efforts to achieve best practice child restraint use". They then recommended that, "this experience can be used to see low and middle-income countries achieve best practice in a shorter time frame than experienced in high income countries, where mandatory restraint use began in the 1970s and best practice in child restraint use has taken decades to develop." The same advice could apply to Japan given that restraint use legislation only came into effect in 2000.

It is hoped that the findings in this preliminary study have helped to lay the groundwork that will lead to more in-depth investigations into how Japan can develop future campaigns that are more effective in changing people's attitudes and behavior towards the use of child restraint seats so that the safety of all children at all times is ensured.

## Footnotes

- I. Translation of Japanese slogans into English was carried out by the author.

## References

- 1) National Police Agency and Japan Automobile Federation (2015) *Chairudo shi-to shiyō joukyō zenkoku chōsa [A national survey of child seat use]*. Available at: <http://www.jaf.or.jp/eco-safety/safety/data/> (Accessed: 11 September 2015).
- 2) Institute for Traffic Accident Research and Data Analysis (2014) *Koutsu jikō bunseki repō-to No. 106 [Road Accident Analysis Report No. 106]*. Available at: <http://www.itarda.or.jp/itardainformation/info106.pdf> (Accessed: 14 September 2015).

- 3) Brown, J., Hatfield, J., Du, W., Finch, C. F. and Bilston, L. E. (2010) 'The Characteristics of Incorrect Restraint Use Among Children Traveling in Cars in New South Wales, Australia', *Traffic Injury Prevention*, 11(4), pp. 391–398. doi: 10.1080/15389588.2010.481770.
- 4) *Child Restraint Systems* (2013) Available at: <http://www.roadsafetyobservatory.com/Review/10074> (Accessed: 14 September 2015).
- 5) Carlsson, A., Strandroth, J., Bohman, K., Stockman, I., Svensson, M. Y., Wenall, J., Gummesson, M., Turbell, T. and Jakobsson, L. (2013) 'Review of Child Car Occupant Fatalities in Sweden During Six Decades', *IRCOBI 2013 Conference*. Gothenburg, Sweden: International Research Council on the Biomechanics of Injury. pp. 868–881.
- 6) Consumer Affairs Agency, Government of Japan (2013) Kodomo wo jiko kara mamoru! Purojekuto [Protecting children from accidents! Project]. Available at: [http://www.caa.go.jp/kodomo/project/pdf/130509\\_project.pdf](http://www.caa.go.jp/kodomo/project/pdf/130509_project.pdf) (Accessed: 20 October 2015).
- 7) Ministry of Land, Infrastructure, Transport and Tourism (2014) Chairudo Shi-to Ko-na Topu Peiji/ Kokudokoutsusho [Child seat corner Top Page / Ministry of Land, Infrastructure, Transport and Tourism]. Available at: <http://www.mlit.go.jp/jidosha/child/> (Accessed: 26 November 2015).
- 8) Japan Automobile Federation (2014) Hajimete no chairu shi-to kuikku gaido 6sai ni nareba, chairudo shi-to sotsugyou? [A quick guide to your first child seat. Does 6 years old mean graduation from a child seat?]. Available at: <http://www.jaf.or.jp/eco-safety/safety/childseat/P4/> (Accessed: 27 November 2015).
- 9) Consumer Affairs Agency, Government of Japan (2011) Kodomo wo jiko kara mamoru! Purojekuto – 「Kakonokodomo anzen me-ru from Shouhishacho」 [Protecting children from accidents! Project – Previous mails from the Consumer Affairs Agency regarding child safety]. Available at: <http://www.caa.go.jp/kodomo/mail/past/vol/20111006.php> (Accessed: 26 November 2015).
- 10) Kakefuda, I., Yamanaka, T., Stallones, L., Motomura, Y. and Nishida, Y. (2008) 'Child restraint seat use behavior and attitude among Japanese mothers', *Accident Analysis & Prevention*, 40(3), pp. 1234–1243. doi: 10.1016/j.aap.2008.01.013.
- 11) Nishidate, A. (2013) 'Parental Awareness of Restraint Use and Seating Position among Young Children in Motor Vehicles', *Japanese Journal of Traffic Psychology*, 29(1), pp. 42–53.
- 12) Nakata, M. and Ebata, Y. (2013) 'Association between mothers' knowledge and perception of child safety seats and use of the seats for infants', *Journal of International University of Health and Welfare*, 18(1), pp. 7–18.
- 13) WHO (2015) *Decade of Action for Road Safety 2011–2020*. Available at: [http://www.who.int/roadsafety/decade\\_of\\_action/en/](http://www.who.int/roadsafety/decade_of_action/en/) (Accessed: 16 September 2015).
- 14) *Japan Automobile Federation* (2015) Available at: <http://www.jaf.or.jp> (Accessed: 14 September 2015).
- 15) *Japan Traffic Safety Association* (2015) Available at: <http://www.jtsa.or.jp> (Accessed: 14 September 2015).
- 16) *Japan Traffic Safety Education Association* (2012) Available at: <http://www.jatras.or.jp> (Accessed: 14 September 2015).
- 17) Chiba, A., Ogasawara, M. and Kawauchi, K. (2015, August). *Kokunaigai no hokeniryoubunya ni okeru nyuuyoujiyou chairudo shi-to ni kan suru bunken kentou [A Literature review regarding domestic and overseas child seat issues in the healthcare field]*. Poster presented at the 18<sup>th</sup> meeting of the Japan Academy of Community Health Nursing, Yokohama, Kanagawa.
- 18) Hata, E. and Doi, Y. (2003) *Behavioral Science - Theory and Application for Health Promotion*. Tokyo: Nankodo.
- 19) Japan Traffic Safety Association (2014) Heisei 26nen shiyou koutsuu anzen posuta- kimaru - ippan zaidan houjin zennihon koutsuu anzen kyokai [Posters selected for use in 2014 (heisei 26) – Japan Traffic Safety Association]. Available at: <http://www.jtsa.or.jp/topics/T-242.html> (Accessed: 27 November 2015).
- 20) Cabinet Office, Government of Japan (2013) Heisei 25nen haru no zenkoku koutsuu anzen undo suishin youkou – naikakufu [Outline of the 2013 (Heisei 25) national road safety Spring promotion – Cabinet Office]. Available at: [http://www8.cao.go.jp/koutu/keihatsu/undou/h25\\_haru/yoko.html](http://www8.cao.go.jp/koutu/keihatsu/undou/h25_haru/yoko.html) (Accessed: 27 November 2015).
- 21) Cabinet Office, Government of Japan (2014) Heisei 26nen haru no zenkoku koutsuu anzen



- undo suishin youkou – naikakufu [Outline of the 2014 (Heisei 26) national road safety Spring promotion – Cabinet Office]. Available at: [http://www8.cao.go.jp/koutu/keihatsu/undo/h26\\_haru/youkou.html](http://www8.cao.go.jp/koutu/keihatsu/undo/h26_haru/youkou.html) (Accessed: 27 November 2015).
- 22) *Safety Belt safe U.S.A.* (2015) Available at: <http://www.carseat.org> (Accessed: 16 September 2015).
- 23) Ehiri, J., Ejere, H., Magnussen, L., Emusu, D., King, W. and Osberg, J. (2006) 'Cochrane review: Interventions for promoting booster seat use in four to eight year olds traveling in motor vehicles', *Evidence-Based Child Health: A Cochrane Review Journal*, 1(3), pp. 854–888. doi: 10.1002/ebch.51.
- 24) Grossman, D. C. and Garcia, C. C. (1999) 'Effectiveness of health promotion programs to increase motor vehicle occupant restraint use among young children', *American Journal of Preventive Medicine*, 16(1), pp. 12–22. doi: 10.1016/s0749-3797(98)00120-2.
- 25) Zaza, S., Sleet, D. A., Thompson, R. S., Sosin, D. M. and Bolen, J. C. (2001) 'Reviews of evidence regarding interventions to increase use of child safety seats', *American Journal of Preventive Medicine*, 21(4), pp. 31–47. doi: 10.1016/s0749-3797(01)00377-4.
- 26) Keay, L., Hunter, K., Brown, J., Simpson, J. M., Bilston, L. E., Elliott, M., Stevenson, M. and Ivers, R. Q. (2012) 'Evaluation of an Education, Restraint Distribution, and Fitting Program to Promote Correct Use of Age-Appropriate Child Restraints for Children Aged 3 to 5 Years: A Cluster Randomized Trial', *American Journal of Public Health*, 102(12), pp. e96–e102. doi: 10.2105/ajph.2012.301030.
- 27) Ebel, B. E., Koepsell, T. D., Bennett, E. E. and Rivara, F. P. (2003) 'Use of Child Booster Seats in Motor Vehicles Following a Community Campaign', *JAMA*, 289(7), p. 879. doi: 10.1001/jama.289.7.879.
- 28) Bryant-Stephens, T., Garcia-Espana, J. F. and Winston, F. K. (2013) 'Boosting Restraint Norms: A Community-Delivered Campaign to Promote Booster Seat Use', *Traffic Injury Prevention*, 14(6), pp. 578–583. doi: 10.1080/15389588.2012.733840.
- 29) Wundersitz, L. N., Hutchinson, T. P. and Woolley, J. E. (2010) *Best practice in road safety mass media campaigns: A literature review*. Adelaide, Australia: Center for Automotive Safety Research.
- 30) Delaney, A., Lough, B., Whelan, M. and Cameron, M. (2004) *A review of mass media campaigns in road safety*. Clayton, Vic.: Monash University, Accident Research Centre.
- 31) *Child Safety Seat Coalition Toronto: Baby on Board* (no date) Available at: [http://adsoftheworld.com/media/print/child\\_safety\\_seat\\_coalition\\_toronto\\_baby\\_on\\_board](http://adsoftheworld.com/media/print/child_safety_seat_coalition_toronto_baby_on_board) (Accessed: 14 September 2015).
- 32) *Health Authority Abu Dhabi: Fly, 1* (no date) Available at: [http://adsoftheworld.com/media/print/health\\_authority\\_abu\\_dhabi\\_fly\\_1](http://adsoftheworld.com/media/print/health_authority_abu_dhabi_fly_1) (Accessed: 14 September 2015).
- 33) Road Safety GB (2013) *Campaign warns of dangers of wrong car seat*. Available at: <http://www.roadsafetygb.org.uk/news/2960.html> (Accessed: 27 November 2015).
- 34) Will, K. E., Sabo, C. S. and Porter, B. E. (2009) 'Evaluation of the Boost 'em in the Back Seat Program: Using fear and efficacy to increase booster seat use', *Accident Analysis & Prevention*, 41(1), pp. 57–65. doi: 10.1016/j.aap.2008.09.007.
- 35) Global Road Safety Partnership. *Campaigns*. Available at: <http://www.grsroadsafety.org/our-knowledge/safer-road-users/campaigns> (Accessed: 18 September 2015).
- 36) Peters, G.-J. Y., Ruiter, R. A. C. and Kok, G. (2013) 'Threatening communication: a critical re-analysis and a revised meta-analytic test of fear appeal theory', *Health Psychology Review*, 7(sup1), pp. S8–S31. doi: 10.1080/17437199.2012.703527.
- 37) Keay, L., Brown, J., Hunter, K. and Ivers, R. (2015) 'Adopting child restraint laws to address child passenger injuries: Experience from high income countries and new initiatives in low and middle income countries', *Injury*, 46(6), pp. 933–934. doi: 10.1016/j.injury.2015.04.027.