Knowledge, Attitude and Practice on Car Safety Seats: A Cross-sectional Survey of Armenian Parents Living in Yerevan

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by

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LIST OF ABBREVIATIONS

WHO	World Health Organization
CSS	Car safety seat
UNECE	United Nations Economic Commission for Europe

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ABSTRACT

Background: Almost 150 children are treated for road traffic injuries in emergency departments, every hour in the world. World Health Organization states that child restraints can reduce infants' death by approximately 70%, and death among children by up to 80% if the restraints are correctly installed and used. Currently, in the absence of compulsory child safety seat legislation in Armenia only parents are responsible for their child passenger road safety.

Objectives: The aim of this study was to investigate the knowledge, attitude and practice of Armenian parents regarding car safety seats and to find out factors associated with car safety seat use.

Methods: Cross-sectional study design was utilized. A survey with self-administered questionnaire was conducted among the parents of children 0-6 years old living in Yerevan city, Armenia. Two stage cluster sampling was performed. In the first stage, kindergartens were chosen as clusters by simple random sampling. During the second stage from each of the selected kindergartens the parents were chosen based on convenience sampling. Binary logistic regression was performed to identify variables significantly associated with the car safety seat use. Multivariable logistic regression explored independent associations of variables with the CSS use. Backward elimination approach helped to develop final predictive model for CSS use.

Results: The final sample comprised of 263 parents from 28 public and 5 private kindergartens from Yerevan. The mean percent scores for the knowledge and attitude regarding car safety seats was 65.0% and 71.0 %, respectively. From the total sample 26.6 % of the parents have been categorized as CSS users. In the final adjusted analysis child age, attitude score, knowledge score, usual driver's seat belt wearing status, and average monthly expenditures were significantly associated with CSS use.

Conclusion: This study was the first-time exploration of Armenian parents' knowledge, attitude and practice of CSS-s. The findings from our study might serve as a starting point for further research on proper use of CSS-s among Armenian parents not only in Yerevan, but across the country. The study revealed many important aspects of parental knowledge and attitude toward CSS, which might be used for fruitful interventions to increase the knowledge and actual use of car safety seats in Armenia.

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1. INTRODUCTION/LITERATURE REVIEW

1.1.Burden of road traffic injuries and fatalities in the world

Road traffic injuries are defined by World Health Organization (WHO) as "fatal or non-fatal injuries incurred as a result of a road traffic crash", while road traffic crash is defined as "an incident, involving at least one moving vehicle, that may or may not lead to injury, which occurs on a public road".[1] Road traffic injuries lead to approximately 1.25 million deaths each year in the world and more than 50 million people are injured or disabled due to road traffic crashes each year.[2] According to WHO, road traffic injuries will become the seventh leading cause of death by 2030, if appropriate and sustained actions are not implemented.[2] More than 90% of road traffic related fatalities ("death occurring within 30 days of the road traffic crash"[1]) occur in low and middle income countries, although only 54% of the world's motor vehicles belongs to these countries.[2]

Road traffic injuries cause physical and emotional damage to humans and contribute to a heavy burden on the economy of the country and households.[3] Globally US $518 billion is being spent on road traffic crash recovery.[4] In some low and middle-income countries 3% of GDP is being lost as a result of road traffic crashes.[4] The families, friends and other caregivers of road traffic crash victims and survivors suffer from psychological and financial adverse effects. Households are driven into poverty, as they lose their breadwinner, or they bear expenses of the required medical care for their ill or disabled family member.[3]

Almost 150 children are treated for road traffic injuries in emergency departments, every hour in the world.[5] The rates of child road traffic injury and disability is estimated to be around 10 million each year in the world, which accounts for 9482 disability-adjusted-life year lost for children and youth aged 0-15 years old.[3] Moreover, road crash related injuries cause more death

for children and adolescents between 5 to 19 ages as compared to any other type of injuries.[5] More than 260 000 children and youth aged 0-19 years has died due to road traffic crashes worldwide in 2004.[3]

Risk factors for children road traffic injuries include speeding, drink driving, not using safety equipment, and other factors related to vehicle characteristics and environmental safety.[3] The set of all child road traffic injury related factors is explained in World Report on Child Injury Prevention in the context of conceptual framework of Haddon Matrix[3] (Picture 1). This scheme includes risk factors related to pre-event, event and post-event time. Children may sustain injuries in variety of roles as road users: being a car occupant, pedestrian, and bicyclist. Most of the injuries of young children who are car occupants occur as a result of improper use of safety measures such as car safety restraints.[3]

In 2010 a resolution has been adopted by the United Nations General Assembly and the Decade of Action for Road Safety (2011-2020) was established. It calls on 110-member countries to establish Global Plan for the Decade of Action, with the aim of saving millions of lives worldwide. WHO chairs the United Nations Road Safety Collaboration and serves as monitoring and reporting body through its "Global status report on road safety" reports.[6] Despite the fact that one of the main measures which The Decade of Action for Road Safety (2011–2020) calls on countries to implement is of having appropriate child restraint law, so far only 53 countries have child safety restraint law based on child's age, height and weight.[4] This law covers only 17% of the world population.

There is undeniable evidence that road safety laws regarding key risk factors significantly improve road users' behavior, thus resulting in reduction of road traffic crashes, injuries and fatalities.[4] WHO states that child restraints can reduce infants' death by approximately 70%, and

death among children by up to 80%, if the restraints are correctly installed and used.[2] In order for the prevention measure to be effective, the car safety seats (CSS) should be appropriate for child's age, height and weight, it should be correctly installed in correct position and in correct place in the vehicle, and the child should be fastened correctly, every time when traveling in a car.[7] There are different types of CSS-s, including rear-facing only, forward-facing with harness, convertible, booster seats, 3 in 1 seats.[5] (Picture 2)

Several studies have been conducted around the world assessing car safety seat knowledge, attitude and practical use among population, which revealed that high income status of parents, an optimal knowledge on child restraint, or positive attitude towards CSS-s or importance is associated with the usage of CSS-s.[8–14]

1.2.Situation in Armenia

According to WHO 2015 report on road safety, Armenia had a 17:100 000 mortality rate from road traffic injuries and was in 5th place among European Region countries in 2013.[4] According to United Nations Economic Commission for Europe (UNECE) databases, 267 people were killed and 4,451 people were injured in road traffic crashes in Armenia, in 2016.[15] Unfortunately, no data is available on children passenger injuries in Armenia. In contrast to many European countries and US where child safety restraint laws have been implemented for many years already, Armenia has only a restriction on children sitting in the front seat of vehicles and there is currently no child safety restraint law.[4] The number of cars in Armenia is growing rapidly, and new highways are constructed, while the country lacks appropriate road safety infrastructure.[4] The increased motorization has been associated with the increase in child passenger mortality and morbidity in middle and low income countries.[16]

Currently, in the absence of compulsory child safety restraints legislation in Armenia only parents are responsible for their child passenger road safety. It is crucial, therefore, to investigate the knowledge, attitude, and practice regarding child safety seats among Armenian parents. Such information could help policy makers if they undertake educational programs or legislative measures to increase CSS use among Armenian population.

1.3.Study aims and research questions

The aim of this study is to investigate the knowledge, attitude and practice of Armenian parents regarding child safety seats and to find out factors associated with car safety seat use. The main research questions are the following:

- *What is the level of knowledge, attitude and practice of CSS use among parents of children 0-6 years old in Yerevan?*
- *Are knowledge and attitude towards CSS use associated with CSS use among parents in Yerevan?*
- *What are the barriers to using CSS among Armenian parents?*
- *Is there an association between socio-demographic characteristics (socio-economic status, age, gender, education) of respondents and CSS use?*

2. MATERIALS AND METHODS

2.1. Study design

Cross-sectional study design was utilized.[17] A survey with self-administered questionnaire was conducted among the parents of children 0-6 years old living in Yerevan city, Armenia.

2.2. Study population and setting

The study was conducted in Yerevan, Armenia. Study population included parents of children from 0-6 years of age from the chosen kindergartens. Eligibility criteria were the following:

- knowledge of Armenian language,
- being a parent of a child or children from 0-6 of age, and
- having at least one car in household

2.3.Sampling strategy

From Yerevan Municipality web-site the list of 162 kindergartens was obtained.[18] Those kindergartens are subordinated to the municipality of Yerevan. Also the list of 74 licensed kindergartens from the web-site of Ministry of Education and Science was obtained.[19] The combined list (236) of these two groups of kindergartens was used as the sampling frame. Two stage cluster sampling was performed. In the first stage, 31 kindergartens were chosen as clusters by simple random sampling. During the second stage from each of the selected kindergartens 10 parents were chosen based on convenience sampling.

2.4.Sample size calculation

The student investigator calculated sample size using the formula for difference in proportions. The two groups were parents with high and low education levels. The estimates were obtained from the previous study conducted in similar to Armenia setting, where there has been no car safety seat law.[20] The proportion of those who had a car safety seat and used it for their children among the parents with low education level (p_1) is 17.13% , and the proportion of the car safety sear users among the parents with higher education level (p_2) is 32.15%.

$$n_1 = \frac{\left(Z_{\alpha/2}\sqrt{2pq} + Z_{\beta}\sqrt{p_1q_1 + p_2q_2}\right)^2}{(p_1 - p_2)^2}$$

$n_1 = n_2$

$n = n_1 + n_2$,

Where:

$$p = \frac{p_1 + p_2}{2}$$

$Z_{\alpha/2}$ = 1.96 (for 95% confidence interval)

Z_{β}= 0.84 (for 80% Power)

Where n_1- is the required sample size in one group (higher education level group), and n_2-is the sample size in second group (lower education level group).

$$n_1 = \frac{\left(1.96\sqrt{2 * 0.2464 * 0.7536} + 0.84\sqrt{0.1713 * 0.8287 + 0.3215 * 0.6785}\right)^2}{(0.1713 - 0.3215)^2} = 128.2$$

$$= 129$$

Total n = 129 +129 = 258

Because cluster sampling was used and the cluster size is 10, the design effect of 1.2 was factored in the calculation. Therefore, the final effective sample size totaled to 310

n = 258 *1.2 = 310

Taking into account 91% response rate from the previous study with similar methodology[12], 11 persons received the questionnaires from each cluster to make sure that at least 10 completed questionnaires were received back.

2.5.Study instrument

The student investigator developed the questionnaire by adapting previous studies' instruments to Armenian culture and language[9,20,21](Appendix 1). It included 5 sections: characteristics of traveling conditions of a child, knowledge regarding car safety seats, attitude towards car safety seats practice, and socio-demographic characteristics. The survey instrument was translated to Armenian and pretested with 5 parents of children from the general population (Appendix 2). Difficult or unclear questions were reformulated and skip patterns were improved. Formulating knowledge questions hypothetically allowed to avoid the feelings of guilt and discomfort among parents. Also, CSS pictures were included to help the participants with answer choices regarding the types of CSS used. The completion of the questionnaire took 10-15 minutes.

2.6. Data collection and logistic considerations

A request letter has been sent to Yerevan Municipality asking a permission to enter the public kindergartens. Also letters for permission were directed to the principals of private kindergartens. After receiving Yerevan Municipality's support, the data collection was

conducted by the student investigator from May to April, 2018. In each kindergarten 11-15 parents were contacted by convenience either in the morning (when they drop their child) or in the evening (when they pick-up their child). The screening questions were asked to check for the eligibility and the questionnaires with empty envelops were given to the participants. In each kindergarten a box was allocated for the returned questionnaires. The student investigator collected back the completed questionnaires from the boxes in the week following the contact. A journal form (Appendix 5) was used, where the ID-s were assigned to each kindergarten and the unique ID-s of participants were starting from the kindergarten ID and were followed by the consecutive numbers (1-15). The data was single entered and analyzed using SPSS 21 software. To clean the data, the student investigator conducted 10% random check and range checks across the data.

2.7.Variables

The dependent variable was car safety usage, which was dichotomized into two categories: 1) the participants who have CSS and report the frequency of use as “always” or “often” (CSS Users), and 2) those respondents who do not have a CSS and those who have CSS but report a frequency of use as “sometimes”, “seldom” and “never” (CSS non-users).

The socio-demographic variables included age, highest completed education, average monthly expenditures, number of cars in the household, and kindergarten type. Children characteristics included child age (continuous), gender (categorical), weight in kg-s (continuous), and height in cm (continuous). Traveling condition variables included traveling frequency, distance, usual driver, and driver’s seat belt use.

The student investigator gave the score of "1" to the right answers to knowledge questions, while the wrong answers or "don't know"-s scored 0 (Table 3). Eight knowledge questions were summed up to receive a total knowledge score. In the attitude domain (Table 4) the responses implying positive attitude scored 1, while responses implying negative attitudes scored 0, except for attitude questions 1 and 2 for which 2 points were assigned to positive attitude (Yes), 1 to neutral (I do not know, it depends) and 0 to negative attitude (No, I do not see the importance). All five attitude questions were summed up to receive the overall attitude score. Also, the student investigator calculated percent scores for knowledge and attitude domains.

2.8. Statistical analyses

Binary logistic regression was performed to identify variables significantly associated with the CSS use. Odds ratios, CI 95% intervals and p-values were obtained and reported.

Multivariable logistic regression explored independent associations of variables with the CSS use. Backward elimination approach helped to develop final predictive model for CSS use.

2.9.Ethical considerations

American University of Armenia's (AUA) Institutional Review Board (IRB) approved the study. All participants provided oral informed consent (Appendix 3).

3. RESULTS

3.1.Descriptive Statistics

3.1.1. Administrative results

The principals of 31 kindergartens randomly selected from the sampling frame were contacted to obtain permission for the study. Those kindergartens which refused participation in the study or for which no response could be obtained were replaced by additional kindergartens from the list. During the data collection to adjust for the non-response 2 more kindergarten principals were contacted. Overall, 60 kindergartens were contacted, while 33 kindergarten principals agreed to let the student meet with their parents (five private, 28 public).

In 33 kindergartens 430 people were approached, of which 371 (86.3 %) agreed to participate and were given the questionnaire, 36 (8.4 %) were non-eligible (no car in the household), and 23 (5.3 %) refused to participate. Out of 371 parents who received the questionnaire 263 (70.9 %) returned completed questionnaires, 3 parents (0.8 %) returned non-completed questionnaires and 105 (28.3 %) did not return.

3.1.2. Socio-demographic information

Socio-demographic characteristics of the respondents are presented in Table 1. The majority of the study participants were mothers (85.6 %). The mean age was 32.3, ranging from 21 to 45. Majority of the participating families (59.5 %) had two children. Sixty-five percent of the respondents hold a University degree. Almost all participants were married (98.5 %). Majority of the participants (98.5 %) attended public kindergartens.

Table 2 describes children characteristics and the traveling conditions in the cars. The age of children averaged 4.0 ranging from 11 months to 6.4 years. Half of the children (56.0%) were traveling every day by a private car. For the majority of trips father was the usual driver (86.8 %). About 71% of the usual drivers used seatbelts most of the time.

3.1.3. Knowledge about CSS

Table 3 shows the answers to knowledge questions. Almost all respondents (99.8%) have heard about CSS-s. About 69% of respondents new that they cannot protect their children passenger during the road traffic crash by holding them or keeping in lap. The majority of the respondents (85.8 %) wrongly thought that the children less than 7 years old should seat on rear seat with seat belt restrained. Most of the respondents knew that the CSS usage does not depend on the speed of the car (87.3 %). One third of the parents did not know that the different types of CSS-s are to be used for different age groups. Moreover, one third of the respondents did not know that CSS cannot be installed on passenger seat. Only 20 % of the parents knew about the proper CSS type for the children below 1 year of age.

The mean knowledge score was 5.2 (SD=1.4). The mean percent score was 65.0%.

3.1.4. Attitude towards CSS

Table 4 shows the responses to attitude questions. Almost half of the respondents would not like Armenia to have CSS law. More than half of the participants reported that they would probably buy a CSS in the absence of its provision by the government. Almost all participants had positive attitude towards changing the CSS type for their grown children. Majority of the

participants had positive attitude towards possible educational programs on CSS for themselves or their family-member. Most of the participants (70%) felt that CSS is costly for their family.

The mean attitude score was 5.0 (SD=1.5). The mean percent score was 71.0%.

3.1.5. Practice of CSS

The CSS practice is described in Table 5. Thirty-eight percent of the respondents reported that they have a CSS, of which the majority (72%) were forward facing type of a CSS. Majority of the CSS owners use their CSS always or often (69 %), while the remaining used it sometimes, seldom or never. Those who did not have a CSS (163) were asked about their intention to use it if was distributed for free. Majority of the respondents (83 %) reported that they would use CSS, while 26 parents answered negatively. Those who answered negatively and those who had CSS but were using it seldom or never were asked about reasons for it. The identified barriers included "feeling it is not important" (18.4 %), and "it takes lots of space in their car" and/or "not convenient for them to use" (31.6 %). Out of 38 respondents who answered this question 16% reported that their child does not like it and does not feel comfortable while being in a CSS.

Almost half of the CSS owners (44.9 %) installed the CSS at left side in the rear seat. One fourth of the respondents did not follow any instructions while installing the CSS in a car. Some CSS owners were sure that there are no special instructions for the installment process (11%). Half of the CSS owners obtained their seat without anyone's advice or it was a gift (50.5%). Only 4 parents received an advice from the medical worker, while the rest of the parents were informed about CSS via Internet, Tv or friends.

Overall, 26.6 % of respondents were categorized into CSS users.

3.2.Regression analyses

3.2.1. Bivariate analysis

Table 6 shows the results of bivariate logistic regression. One-year increase in child age was associated with substantially lower odds of using car safety seat for a child (OR=0.59, 95% CI: 0.45-0.77, p=0.000). The CSS use was associated with the everyday traveling distance of a child in unadjusted analysis. The odds of using CSS-s was three times higher among children who travelled every day as compared to those who travelled 1-4 times a month/or less (OR=3.18, 95%CI: 1.09- 13.27, p=0.035). Those children who traveled 5-10 km daily had 2.57 times higher odds of CSS use when compared to those who traveled a distance less than 3 km (OR=2.57, 95%CI: 1.16-5.69, p=0.02). The unadjusted results showed an association between usual driver's seat bel wearing status for him/herself and CSS usage for a child. The drivers who always used CSS were more likely to use CSS for the child (OR=2.48, 95%CI: 1.22 – 4.89, p=0.011). When compared with the families in the lowest category of monthly expenditures (<=200 000 AMD), the families who were spending more than 300 000 AMD monthly, had 4 times higher odds of CSS use (OR=4.11, 95%CI: 1.69-9.99, p=0.002). The parents from the private kindergarten were two times more likely to use CSS as compared to public kindergarten attendees (OR=2.56, 95%CI: 1.28-5.11, p=0.008). One-point increase in the parental knowledge score was associated with 1.6 times higher odds of CSS use (OR=1.60, 95%CI: 1.25-2.06, p<0.0001). There was also a significant relationship between the attitude and CSS usage with one-point increase in parental attitude was associated with 1.7 times higher odds of CSS use (OR=1.66, 95%CI: 1.3-2.1, p<0.0001). The bivariate analyses did not show significant

association ($p<0.05$) between the CSS usage and parental age (OR=1.02, 95% CI: 0.95-1.08, p=0.522) or the education level (OR=1.92, 95% CI: 0.73-5.35, p=0.177).

3.2.2. Multivariable analysis

In the final adjusted analysis child age, attitude score, knowledge score, usual driver's seat belt wearing status, and average monthly expenditures were significantly associated with CSS use (Table 7). One-point increase in knowledge score was associated with higher odds of car safety seats use (OR=1.45, 95% CI: 1.08- 1.93, p=0.011). One-point increase in attitude score was associated with 1.53 times higher odds of CSS use (OR=1.53, 95% CI: 1.15-2.02, p= 0.003). The families in highest spending category (>300 000 AMD) were about three times more likely to use CSS as compared to those spending less than 200,000 AMD per month (OR=3.35, 95%CI: 1.17-9.58, p=0.024). The drivers who always used seatbelt for themselves were 3.4 times more likely to use CSS for their child (OR= 3.4, 95% CI: 1.45 –8.24, p=0.005).

4. DISCUSSION

4.1.Main findings

The study explored knowledge, attitude and practice on CSS-s among Armenian parents of 0-6 years old children, living in Yerevan and having a car in the household. The study revealed a moderate level of knowledge and attitude (percent scores of 65.0 % and 71%, respectively) and only 26.6 % actual use of CSS for the child passenger.

Almost all parents in our study had heard about CSS (99.80%). This is a substantial improvement over the results of the phone survey conducted in 2010 among Yerevan

households, where 38% percent of the respondents have not heard about CSS.[22] Despite the overall high knowledge score detected in our study (65% percent score), specific questions about proper use of the seats were answered incorrectly by the substantial proportion of the respondents. For example, we revealed that 80% of the parents were not aware of proper CSS type for the infants less than 1 year old. Also 80% of the parents thought that children less than 7 years old should be restrained by seatbelt, while age and size non-appropriate car safety restraints might lead to serious health consequences.[23] In addition, one third of the respondents thought that parents can protect their child during road crash if they hold them. There is undeniable evidence that the risk of serious injuries for unrestrained child (0-7 years) is three times higher when compared with restrained ones.[24]

The attitude scale revealed mostly positive attitude of parents regarding CSS (percent score of 71%). For example, more than half of the parents felt that it is necessary to have a law on CSS mandatory use in Armenia. A study conducted in China, revealed that 68.8% of the respondent parents would like to have a law on CSS use.[20] However, we also revealed that many parents consider CSS as expensive for them, which might imply difficulties with the mandatory use of CSS in Armenia if their affordability is not ensured.

The prevalence of CSS ownership found in this study (38.0%) is higher than the actual use of CSS (26.6 %). Our results show that even those who had CSS, experienced barriers to use them for their children.

Only four percent of the respondents received advice to use CSS from the medical workers. A study conducted in Turkey in 2009 showed similar results: only 2.8% of the respondents reported that they received any information from health worker.[25] This is a huge concern, as healthcare professionals play an important role in spreading awareness on child safety management. A

study conducted in US in 2018 found that the odds of proper use of CSS is two times higher among the parents who received an information on CSS-s from their pediatrician as compared to those informed via internet, relatives or friends.[26] More than one third of our participants reported that they do not follow any instructions for CSS installment in a car. This might suggest that many CSS users are not aware of such instructions and imply improper use of CSS-s. Meanwhile, improper use of CSS-s including a premature transition of a child to a non-appropriate type of restraint might be as dangerous as not using CSS, or even worse.[7,27]

Knowledge, attitude, child age, usual driver's seat belt use, and socioeconomic status were shown to be significantly associated with CSS use in our study which is consistent with the international literature.[20,25,28,29]

Smaller age of the child was associated with higher odds of CSS use (OR=0.61, 95% CI: 0.44-0.84, p=0.003). This finding is consistent with the literature[20,25,28]. The driver's seatbelt use was associated with substantially higher odds of CSS use (OR= 3.4, 95% CI: 1.45 –8.24, p=0.005), similar to other studies. [28,29] Although in Armenia there is a law on mandatory seat-belt use since 2009, the effectiveness of the law enforcement was estimated to be 6 out of 10 in "WHO Global Status Report, 2015".[4] This might suggest that the future possible CSS law adoption in Armenia should be accompanied with the parallel increase in the reinforcement of the mandatory seat belt use.

Average monthly expenditures were associated with CSS use in accordance with literature[20]. This might be explained by the economic advantage of the high-income level parents, who can afford an expensive CSS for their child passenger safety.

4.2. Limitations of the study

Our study had several limitations. First, the generalizability of the findings is limited to only Yerevan population with cars in the household, while the situation in marzes might be completely different. Second, we did not explore the proper use of CSS or the past experience with CSS among Armenian parents, while this an important component of the child road safety management. Third, because of the cross-sectional design of the study, temporal relationships between CSS use and the associated factors such as knowledge and attitude were not explored. Also, self-report of the behavior might be biased, as the surveys are not the most appropriate methods for obtaining information on the behavior of interest, such as CSS use, because it might be that the respondent knows about proper use but does not practice it; so, the answers will reflect the knowledge but not the behavior.

4.3. Strengths of the study

This study was the first-time exploration of Armenian parents' knowledge, attitude and practice of CSS-s. Since there is no CSS law in the country, only the parents are responsible for their child passenger safety. Therefore, it is crucial to explore their knowledge and practice regarding car safety seats. The study revealed many important aspects of parental knowledge and attitude toward CSS, which might be used for fruitful interventions to increase the knowledge and actual use of car safety seats in Armenia. The findings from our study might serve as a starting point for further research on proper use of CSS-s among Armenian parents. Another strength of our study is that we conducted random selection of 33 kindergartens from all the districts of Yerevan, and from both public and private kindergartens, which makes the sample quite representative of Yerevan population.

5. RECOMMENDATIONS

The future studies should explore not only the ownership and use of CSS-s but also the proper use of CSS-s among Armenian parents by using validated questionnaires or real observations. To increase the use of CSS-s, several strategies have been recommended, including educational programs with CSS distribution among parents and car safety seat law [30]. This might be accompanied with the exemption of CSS from sales tax, in order to increase the affordability among parents with low socio-economic status. The programs focusing on the reinforcement of the mandatory seat belt use might facilitate the use of CSS-s in Yerevan population.

Educational programs in primary healthcare facilities, kindergartens and pre-school educational facilities with children and their parents should include the explanation of importance of using age appropriate seats for all age categories of children.

6. CONCLUSIION

This study was the first-time exploration of Armenian parents' knowledge, attitude and practice of CSS-s. Our findings might serve as a starting point for further research on proper use of CSS among Armenian parents not only in Yerevan, but across the country. The revealed important aspects of parental knowledge and attitude toward CSS, might be used for fruitful interventions to increase the knowledge and actual use of car safety seats in Armenia.

REFERENCES

1. Who. Helmets: a road safety manual for decision-makers and practitioners. 2006:176.
2. World Health Organization. WHO | Road traffic injuries. *Who*. 2017. http://www.who.int/mediacentre/factsheets/fs358/en/. Accessed May 28, 2017.
3. Peden M, Oyegbite K, Ozanne-Smith J, et al. World report on child injury prevention. *World Heal Organ*. https://www.ncbi.nlm.nih.gov/books/NBK310641/pdf/Bookshelf_NBK310641.pdf. Accessed January 17, 2018.
4. World Health Organization. Global Status Report on Road Safety 2015. *WHO Libr Cat Data Glob*. 2015:340. doi:10.1136/injuryprev-2013-040775.
5. Road Traffic Safety | Child Safety and Injury Prevention| CDC Injury Center. https://www.cdc.gov/safechild/road_traffic_injuries/. Accessed May 28, 2017.
6. WHO | Decade of Action for Road Safety 2011-2020. *WHO*. 2017. http://www.who.int/roadsafety/decade_of_action/en/. Accessed December 24, 2017.
7. American Academy of Pediatrics. Car safety seats: A guide for families 2008. www.aap.org/family/carseatguide.htm.
8. Pérez-N U~ Nez R, Chandran A, Ijar MH, et al. The use of seatbelts and child restraints in three Mexican cities. doi:10.1080/17457300.2012.754477.
9. Snowdon AW, Polgar J, Patrick L, Stamler L. La connaissance parentale des harnais d'auto pour enfants et de leur utilisation. *CJNR*. 2006;38(2):98-114.
10. Raman SR, Landry MD, Ottensmeyer CA, Jacob S, Hamdan E, Bouhaimed M. Keeping our children safe in motor vehicles: knowledge, attitudes and practice among parents in Kuwait regarding child car safety. doi:10.1080/17457300.201.
11. Snowdon AW, Hussein A, High L, et al. The Effectiveness of a Multimedia Intervention on Parents' Knowledge and Use of Vehicle Safety Systems for Children. doi:10.1016/j.pedn.2007.08.020.
12. Karbakhsh M, Jarahi L. Car child safety seats use among Iranian children in Mashad. *Int J Inj Contr Saf Promot*. 2016;23. doi:10.1080/17457300.2014.912665.
13. Purc-Stephenson RJ, Ren J, Snowdon AW. An exploratory study of parents' use and knowledge of car safety seats in Beijing, China. *Int J Inj Contr Saf Promot*. 2010. doi:10.1080/17457300.2010.487155.
14. Liu X, Yang J, Chen X, Li L. Knowledge, attitudes and behaviors on child passenger safety among expectant mothers and parents of newborns: A qualitative and quantitative approach. *PLoS One*. 2016. doi:10.1371/journal.pone.0146121.
15. Table - UNECE Statistical Database. http://w3.unece.org/PXWeb2015/pxweb/en/STAT/STAT__40-TRTRANS__01-TRACCIDENTS/01_en_TRAccprofile_r.px/table/tableViewLayout2/?rxid=0148e5d2-

9fc0-4b63-ab65-ddbce3544120. Accessed June 3, 2017.

16. Winslow M. World report on road traffic injury prevention. http://apps.who.int/iris/bitstream/10665/42871/1/9241562609.pdf. Accessed February 7, 2018.

17. Aday LA, Cornelius LJ. *Designing and Conducting Health Surveys: A Comprehensive Guide, Third Edition*.; 2006. http://books.google.com/books?id=wL8ZRFYlrbwC&pgis=1.

18. yerevan.am | Official website | Pre-schooling educational institutions subordinated to the municipality of Yerevan. https://www.yerevan.am/en/nuh/?page=1. Accessed May 31, 2017.

19. ՀՀ ԿԳՆ. http://edu.am/index.php/am/about/view/105. Accessed May 31, 2017.

20. Liu S, Zhou H, Ma J, et al. Knowledge, attitudes, and behaviors related to child safety restraint in citizens of Shenzhen Municipality, China, and the associations between these factors. *Traffic Inj Prev*. 2018;19(1):42-48. doi:10.1080/15389588.2017.1329534.

21. Snowdon AW, Hussein A, Purc-Stevenson R, et al. Are we there yet? Canada's progress towards achieving road safety vision 2010 for children travelling in vehicles. *Int J Inj Contr Saf Promot*. 2009;16(4):231-237. doi:10.1080/17457300903308308.

22. Chekijian SA, Truzyan N. Practices, attitudes and perceptions toward road safety in yerevan, republic of armenia. *Ann Adv Automot Med*. 2012;56(November):191-200. http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=3503422&tool=pmcentrez&rendertype=abstract.

23. Hummel T, Langwieder K, Finkbeiner F, Hell W. Injury Risks, Misuse Rates and the Effect of Misuse Depending on the Kind of Child Restraint System. In: ; 1997. doi:10.4271/973309.

24. Lennon A, Siskind V, Haworth N. Rear seat safer: Seating position, restraint use and injuries in children in traffic crashes in Victoria, Australia. *Accid Anal Prev*. 2008;40(2):829-834. doi:10.1016/j.aap.2007.09.024.

25. Şevketoğlu E, Hatipoğlu S, Esin G, Oztora S. Knowledge and attitude of Turkish parents regarding car safety seats for children. *Ulus Travma ve Acil Cerrahi Derg*. 2009;15(5):482-486.

26. Black AK, Lattimore C, Myers J, Carothers B, Anderson B. Identifying Factors to Improve Safety Seat Use in Children. *Pediatrics*. 2018;141(1 MeetingAbstract):68-68. doi:10.1542/PEDS.141.1_MEETINGABSTRACT.68.

27. Committee on Injury and Poison Prevention C on I and P, American Academy of Pediatrics. Selecting and using the most appropriate car safety seats for growing children: guidelines for counseling parents. *Pediatrics*. 2002;109(3):550-553. doi:10.1542/PEDS.109.3.550.

28. Chen X, Yang J, Peek-Asa C, McGehee D V, Li L. Parents' knowledge, attitude, and use of child restraints, Shantou, China. *Am J Prev Med*. 2014;46(1):85-88.

doi:10.1016/j.amepre.2013.08.017.

29. Bromfield N, Mahmoud M. An exploratory investigation of child safety seat use among citizens of the United Arab Emirates. *J Transp Saf Secur*. 2017;9(September):130-148. doi:10.1080/19439962.2016.1228090.

30. Goodwin A, Thomas L, Kirley B, Hall W, O'Brien N, Hill K. Countermeasures that work: A highway safety countermeasure guide for State highway safety offices, Eighth edition. *Washington, DC Natl Highw Traffic Saf Adm*. 2015. doi:Report No. DOT HS 812 202.

TABLES AND FIGURES

Table1: Socio-demographic characteristics of respondents

Parent completed the questionnaire	**% (n)**
Mother	85.6 (225)
Father	14.4 (38)
Parent age (years)	
Mean (SD)	32.3 (4.5)
Range	21-45
Number of children in the family	
One child	25.5 (66)
Two children	59.5 (154)
Three and more children	15.1 (39)
Highest completed education	
School or Professional technical	22.8 (60)
Institute/University	65.0 (171)
Postgraduate	12.2 (32)
Marital Status	
Married	98.5 (259)
Divorced	1.1 (3)
Widowed	0.4 (1)
Average monthly expenditures	
<= 200 000 AMD	27.9 (70)
201 000 – 300 000 AMD	22.3 (56)
More than 300,000 AMD	22.7 (57)
Don't know/ Refusal	27.1 (68)
Number of cars in the household	
One car	76.7 (197)
Two or more cars	23.3 (60)
Kindergarten type attending	
Public	84.0 (221)
Private	16.0 (42)
Total sample	100.0 (263)

Table 2: Characteristics of children and traveling conditions

Child age (years)	
Mean (SD)	4.0 (1.05)
Range	0.9 - 6.4
Child gender % (n)	
Male	58.3 (147)
Female	41.7 (105)
Child weight (Kg)	
Mean(SD)	16.9 (3.7)
Range	(9-28)
Child height (Cm)	
Mean (SD)	16.9 (3.7)
Range	9-28
Child's traveling frequency by private car % (n)	
Every day	56.0 (145)
2-3 times/week	32.4 (84)
2-4 times/month	8.5 (22)
1 time/month or less	3.1 (8)
Child's daily traveled Kilometers % (n)	
Less than 3 km	24.7 (63)
3-5 km	32.5 (83)
5-10 km	27.8 (71)
More than 10 km	14.9 (38)
Usual driver for the trips	
Father	86.8 (224)
Mother	8.5 (22)
Grandparents	2.7 (7)
Other	1.9 (5)
Usual driver's seat belt wearing rate	
Always	70.5 (182)
Often	15.1 (39)
Sometimes	6.6 (17)
Seldom	4.3 (11)
Never	3.5 (9)
Total sample % (n)	100.0 (263)

Table 3: Answers to knowledge questions

1.	Parents can effectively protect their children in the traffic crashes by holding children when traveling.	**% (n)**
	Yes	19.1 (49)
	No	68.5 (176)
	I don't know	12.5 (32)
2.	Have you ever heard about car safety seats for children?	
	Yes	99.2 (260)
	No	0.8 (2)
3.	Children less than 7 years old should sit on the rear seat with seat belt when traveling.	
	Yes	83.5 (217)
	No	14.2 (37)
	I don't know	2.3 (6)
4.	Whether a child uses child safety seat depends on the speed of the car.	
	Yes	5.0 (13)
	No	87.3 (227)
	I don't know	7.7 (20)
5.	The same type of child safety seats can be always used for children aged 0-12 regardless the age of the child.	
	Yes	12.3 (31)
	No	70.4 (178)
	I don't know	17.4 (44)
6.	Child safety seats can be installed in the co-driver seat or rear seat in the same time.	
	Yes	23.9 (62)
	No	67.6 (175)
	I don't know	8.5 (22)
7.	Infants less than 1 year of age should be placed in the child safety seat installed forward in the rear seat of the car.	
	Yes	67.4 (176)
	No	21.1 (55)
	I don't know	11.5 (30)
8.	Which one do you think is safer for a child when traveling in a car?	
	Sitting in the rear seat held by the adult	8.5 (22)
	Sitting in the passenger seat held by the adult	0.4 (1)
	Sitting alone in the rear seat fastened by seatbelt	7.3 (19)
	Sitting alone in the passenger seat fastened by the seatbelt	0.4 (1)
	Sitting alone in the car safety seat of passenger seat	0.4 (1)
	Sitting alone in the car safety seat of the rear seat	83.0 (215)
Total sample		100.0 (263)

Table 4: Answers to attitude questions

1.	Do you think whether special laws need be accepted to restrain parents to use child car safety seats when traveling in Armenia?	% (n)
	Yes	66.3 (173)
	No	18.4 (48)
	I don't know	15.3 (40)
2.	Will you buy child safety seat for the safety if there is no mandatory provision by law?	
	Yes	66.3 (171)
	No	3.1 (8)
	It depends	28.7 (74)
	I do not see the importance	1.9 (5)
3.	Do you think it is necessary to change the child safety seats as the child grows?	
	Yes	88.7 (228)
	No	7.4 (19)
	It does not matter	3.9 (10)
4.	Do you think you have enough knowledge on proper use of child safety seat?	
	Yes	34.7 (90)
	A little	56 (145)
	No	9.3 (24)
5.	Would you and your family want to gain more knowledge on child safety seat?	
	Yes	75.6 (195)
	No	17.1 (44)
	It does not matter	7.4 (19)
6.	What is the most important factor when purchasing car safety seat? (Please, choose no more than 1 option)	
	Safety	85.0 (221)
	Style	0.8 (2)
	Quality	3.5 (9)
	Convenience	9.2 (24)
	Other	1.5 (4)
7.	Do you think the car safety seats for children are expensive?	
	Yes	72.0 (185)
	No	16.0 (41)
	It does not matter	12.1 (31)
Total sample		100.0 (263)

Table 5: Car safety seat practice descriptive statistics

Have a car safety seat % (n)	
Yes	38.0 (100)
No	62.0 (163)
Intention to use if car seat is given for free % (n)	
Would use	83.0 (127)
Would not use	17.0 (26)
Frequency of car safety seat use % (n)	
Always	44.0 (44)
Often	25.0 (25)
Sometimes	18.0 (18)
Seldom	8.0 (8)
Never	1.0 (1)
CSS users	26.6 % (69)
CSS non-users	73.4 % (190)
The type of car safety seats owned %(n)	
Rear-facing car seat	5.0 (5)
Forward-facing car seat	72.0 (72)
Booster seat	20.0 (20)
Other	3.0 (3)
Who advised to buy car safety seat %(n)	
Medical worker	4.1 (4)
My friends	17.5 (17)
I read in Internet	20.6 (20)
I saw by TV	7.2 (7)
Other (No one or it is a gift)	50.5 (49)
Do you install car safety seat in your car following the instruction? %(n)	
Yes	65.3 (62)
No	23.2 (22)
There are no instructions	11.6 (11)
Where the car safety seat is usually installed in your car? % (n)	
Passenger seat	2.0 (2)
Left side in the rear seat	44.9 (44)
Middle in the rear seat	19.4 (19)
Right side in the rear seat	33.7 (33)
What is the reason for not using CSS	
No need	18.4 (7)
Inconvenient	31.6 (12)
My child does not like it	42.1 (16)
It is hard to install	7.9 % (3)
Total sample	100.0 % (263)

Table 6: Bivariate unadjusted analyses

Variable	Odds Ratio	Confidence Interval (CI) 95%		P value (Unadjusted)
		Lower	Higher	
Child age (Years)	0.59	0.45	0.77	**0.000**
Child gender				
Male	0.84	0.46	1.42	0.474
Female	1	Reference		
Child's traveling frequency				
Every day	3.18	1.098	13.27	**0.035**
2-3 times/week	3.6	0.99	12.99	0.05
1-4 times/month or less	1	Reference		
Child's daily traveled Kilometers				
Less than 3 km	1	Reference		
3-5 km	1.11	0.48	2.52	0.802
5-10 km	2.57	1.16	5.69	0.02
More than 10 km	0.69	0.69	4.62	0.223
Usual driver for the trips				
Mother	1.37	0.52	3.56	0.51
Father		Reference		
Driver uses seat belt for him/herself				
Yes	2.48	1.22	4.89	0.011
No		Reference		
Parent age (years)	1.02	0.95	1.08	0.522
Number of children in the family				
One child	1.30	0.53	3.17	0.55
Two children	0.94	0.41	2.1	0.88
Three and more children		Reference		
Highest completed education				
School or technical education	1.00	Reference		
Institute/University	1.74	0.83	3.64	0.138
Postgraduate	1.92	0.73	5.35	0.177
Average monthly expenditures				
<=200 000 AMD		Reference		
201 000 – 300 000 AMD	2.90	1.17	7.16	**0.021**
>300 000 AMD	4.11	1.69	9.99	**0.002**
Number of cars in household				
One car	1.00	Reference		
Two cars and more	1.51	0.80	2.84	0.194

Kindergarten type attending					
	Private	2.56	1.28	5.11	**0.008**
	Public	1.00	Reference		
Knowledge Score		1.60	1.25	2.06	**0.000**
Attitude Score		1.66	1.30	2.10	**0.000**

Table 7: Multivariable adjusted logistic regression for CSS use predictors

Characteristic	Odds Ratio (CI 95%)	P Value
Knowledge score	1.45 (1.08 -1.93)	0.011
Attitude score	1.53 (1.15-2.02)	0.003
Child age (years)	0.61 (0.44-0.84)	0.003
Usual driver's seatbelt usage		
Yes	3.46 (1.45 –8.24)	0.005
No	1.00 (Reference)	
Average monthly expenditures		
<=200 000 AMD	1.00 (Reference)	
201 000 – 300 000 AMD	2.26 (0.77 – 6.66)	0.136
>300 000 AMD	3.35 (1.17 – 9.58)	0.024

APPENDICES

Appendix 1: English study instrument

Knowledge, attitude and practice regarding car safety seats

1. Participant's ID_____

2. Date (dd/mm/yy) ____ / ____/_____

Instructions for Completing the Questionnaire

Dear participant, first read carefully each question and the possible response options. Choose the option that best represents your response and circle the number of the option. Some questions should be answered by words or by a number. There are blank lines next to these questions for you to write your response. Please follow the instructions in ***Italics***. These instructions will help you to complete the questionnaire and indicate which questions to skip for your particular case. Some questions may look like others, but each one is different.

Please, try to answer **ALL THE questions**.

Please start answering from here

<table>
<tr><td>3.</td><td>Parent completing the questionnaire</td><td colspan="4">1. Mother
2. Father</td></tr>
<tr><td>4.</td><td>How many children do you have</td><td colspan="4">_____children</td></tr>
<tr><td rowspan="2">5.</td><td rowspan="2">Please provide information regarding your smallest child attending the kindergarten</td><td>Age</td><td>Gender</td><td>Weight</td><td>Height</td></tr>
<tr><td>____years____months</td><td>1.Male
2. Female</td><td>_____
Kilograms</td><td>_____
Centimeters</td></tr>
<tr><td colspan="6">This section includes questions regarding traveling conditions of your smallest child attending the kindergarten.</td></tr>
</table>

6.	How often does your child go out by your family private car?	1. Every day 2. 2-3 times/week 3. 2-4 times/month 4. 1 time/month or less
7.	How many kilometers does your child usually go out by your family car every time?	1. Less than 3 km 2. 3-5 km 3. 5-10 km 4. More than 10 km
8.	Who is usually the driver when your smallest child is in the car?	1. Father 2. Mother 3. Grandparents 4. Other _____(***please, indicate who***)
9.	What is the frequency of wearing seat belt for the driver you mentioned above?	1. Always 2. Often 3. Sometimes 4. Seldom 5. Never
The following section includes questions regarding your knowledge related to car safety seats. Please, indicate If you agree with the following questions by circling one option for each question from the answer options Yes, No, I do not know).		
10.	Parents can protect their children in the traffic crushes by holding children when traveling.	1. Yes 2. No 3. I don't know
11.	Have you ever heard about car safety seats for children?	1. Yes 2. No
12.	Children less than 7 years old should sit on the rear seat with seat belt when traveling.	1. Yes 2. No 3. I don't know
13.	Whether a child uses child safety seat depends on the speed of the car.	1. Yes 2. No 3. I don't know

14.	The same type of child safety seats can be always used for children aged 0-12 regardless the age of the child.	1. Yes 2. No 3. I don't know
15.	Child safety seats can be installed in the passenger seat or rear seat.	1. Yes 2. No 3. I don't know
16.	Infants less than 1 year of age should be placed in the forward-facing car safety seats in the rear seat of the car.	1. Yes 2. No 3. I don't know
The following section includes questions regarding your attitude towards car safety seats and law on car safety seats.		
17.	Which one do you think is safer for a child when traveling in a car?	1. Sitting in the rear seat held by the adult 2. Sitting in the passenger seat held by the adult 3. Sitting alone in the rear seat fastened by seatbelt 4. Sitting alone in the passenger seat fastened by the seatbelt 5. Sitting alone in the car safety seat of passenger seat 6. Sitting alone in the car safety seat of the rear seat
18.	Do you think whether special laws need be accepted to restrain parents to use child car safety seats when traveling in Armenia?	1. Yes 2. No 3. I don't know
19.	Will you buy child safety seat for the safety if there is no mandatory provision by law?	1. Yes 2. No 3. It depends 4. It does not matter
20.	Do you think it is necessary to change the child safety seats as the child grows?	1. Yes 2. No 3. It does not matter
21.	Do you think you have enough knowledge on proper use of child safety seat?	1. Yes 2. A littel 3. No

22.	Would you and your family want to gain more knowledge on child safety seatss?	1. Yes 2. No 3. It does not matter
23.	What is the most important factor when purchasing car safety seat? (***Please, choose no more than 1 option***)	1. Safety 2. Price 3. Brand 4. Style 5. Quality 6. Convenience 7. Other_____(***Please indicate your option***)
24.	Do you think the car safety seats for children are expensive?	1. Yes 2. No 3. It does not matter

The following section includes questions on your practice regarding car safety seats for your smallest child attending kindergarten.

25.	Do you have car safety seat?	1. Yes 2. No (***Go to question 32, please***)
26.	What type of car safety seat is more similar of what you have now.	

			***Please indicate your option here:_____***
1.Rear-facing car seat	2. Forward-facing car seat	3.Booster seat	4. Other

27.	Who has advised you to use safety seat for your child?	1. Medical worker 2. My friends 3. I read in Internet

		4. I saw by TV 5. Other (***Please provide your options)*** _____
28.	Do you install car safety seat in your car following the instruction?	1. Yes 2. No 3. I had no instructions
29.	Where the car safety seat is usually installed in your car?	1. Passenger seat 2. Left side in the rear seat 3. Middle in the rear seat 4. Right side in the rear seat
30.	What is the frequency of car safety seat use when traveling by your private care.	1. Always (***Go to 33)*** 2. Often (***Go to 33)*** 3. Sometimes (***Go to 33)*** 4. Seldom (***Go to 32)*** 5. Never ***Go to 32)***
31.	If you were given free car safety seat appropriate for your child age, weight and height, would you use it for your child while traveling in your car.	1. Yes **(Go to 33)** 2. No
32.	What is the reason for not using car safety seat for your child?	1. No need 2. Inconvenient 3. My child does not like it 4. It is hard to install 5. Other (***please indicate your reasons)***_____
The following section incudes questions regarding socio-demographics.		
33.	Your age in years at the last birthday	_____years old
34.	Your marital status	1. Married 2. Divorced 3. Widowed 4. Single
35.	Indicate the highest level of education that you have completed	1. School 2. Professional technical education 3. Institute/University 4. Postgraduate
36.	In average, how much money does your family spend monthly?	1. Less than 50,000 AMD 2. From 50,000 to 100,000 AMD 3. From 100,001 to 200,000 AMD 4. From 200,001 to 300,000 AMD 5. More than 300,000 AMD 88. Don't know/ Refusal

37.	How many cars do you have in your household?	1. One car 2. Two cars 3. More than two
38.	Please, indicate the model and the year of the vehicle by which usually travels your smallest child attending the kindergarten.	_____year _____model
THANK YOU FOR YOUR PARTICIPATION!		

Appendix 2: Armenian study instrument

Ավտոմեքենայի մանկական նստատեղերի վերաբերյալ գիտելիքները, վերաբերմունքը և վարվելակերպը

1. Հարցվողի հերթական համար _____

2. Ամսաթիվ (օր/ամիս/տարի) ____ / ____/_____

<u>Հարցաթերթիկի լրացման ցուցումներ</u>

Հարգելի՛ մասնակից, ուշադիր կարդացեք յուրաքանչյուր հարց և պատասխանների ներկայացված տարբերակները: Ընտրեք այն տարբերակը, որն ավելի մոտ է Ձեր կարծիքին և նշում կատարեք՝ շրջանակի մեջ վերցնելով Ձեր նախընտրած տարբերակի առջև գրված թիվը: Որոշ հարցերի պետք է պատասխանել բառերով կամ թվերով: Այդ հարցերին հաջորդում են դատարկ տողեր, որպեսզի Դուք գրեք Ձեր պատասխանը: Խնդրում ենք հետևել ***<u>շեղագիր</u>*** գրված ցուցումներին: Այդ ցուցումները կօգնեն Ձեզ լրացնել հարցաշարը և ցույց կտան, թե որ հարցերը Դուք պետք է ***<u>բաց թողնեք</u>***: Որոշ հարցեր կարող են նման լինել մյուսներին, սակայն դրանցից յուրաքանչյուրը տարբեր է:

Խնդրում եմ, փորձեք պատասխանել ԲՈԼՈՐ ՀԱՐՑԵՐԻՆ ԱՆԽՏԻՐ:

<u>Պատասխաններ հարցերին՝ սկսած այստեղից</u>

3.	Հարցաթերթիկը լրացնող ծնողը՝	1. Մայր 2. Հայր			
4.	Քանի՞ երեխա ունեք:	_____երեխա			
5.	Խնդրում եմ, լրացնել մանկապարտեզ հաճախող Ձեր ամենափոքր երեխայի մասին մի քանի տվյալներ՝	**Տարիքը**	**Սեռը**	**Քաշը**	**Հասակը**
		_____*տարեկան* _____*ամսեկան*	1.Արական 2. Իգական	_____ *Կիլոգրամ*	_____ *Սանտիմետր*

Այս բաժնում ընդգրկված հարցերը վերաբերվում են <u>մանկապարտեզ հաճախող Ձեր</u> <u>ամենափոքր</u> երեխայի առօրյա երթևեկությանը:		
6.	Ի՞նչ հաճախականությամբ է Ձեր երեխան երթևեկում Ձեր ընտանիքին պատկանող մեքենայով:	1. Ամեն օր 2. Շաբաթական 2-3 անգամ 3. Ամսական 2-4 անգամ 4. Ամսական մեկ անգամ կամ ավելի քիչ
7.	Յուրաքանչյուր անգամ Ձեր մեքենայով երթևեկելիս մոտավորապես քանի կիլոմետր է երթևեկում ձեր երեխան:	1. 3 կիլոմետրից քիչ 2. 3-5 կիլոմետր 3. 5-10 կիլոմետր 4. 10 կիլոմետրից ավելի
8.	Սովորաբար ո՞վ է վարում Ձեր ընտանիքին պատկանող մեքենան, երբ Ձեր երեխան երթևեկում է:	1. Հայրը 2. Մայրը 3. Տատիկը/Պապիկը 4. Այլ մարդ _____(*խնդրում եմ, նշել թե ով*)
9.	Ի՞նչ հաճախականությամբ է նախորդ հարցում Ձեր նշած վարորդը ամրագոտի օգտագործում իր համար, երբ Ձեր երեխան մեքենայում է լինում:	1. Միշտ 2. Հաճախակի 3. Երբեմն 4. Հազվադեպ 5. Երբեք
Այս բաժնում ընդգրկված հարցերը վերաբերվում են ավտոմեքենայի մանկական նստատեղերի վերաբերյալ Ձեր գիտելիքներին: Խնդրում եմ, նշեք արդյոք համաձա՞յն եք հետևյալ պնդումների հետ՝ <u>շրջանի մեջ վերցնելով մեկ</u> տարբերակ տրված տարբերակներից. Այո, Ոչ, Չգիտեմ:		
10.	Եթե մեքենայով երթևեկելիս ծնողները երեխային իրենց գրկում պահեն, ապա շատ լավ կպաշտպանեն նրանց ճանապարհային պատահարների ժամանակ :	1. Այո 2. Ոչ 3. Չգիտեմ
11.	Երբևէ լսե՞լ եք ավտոմեքենայի մանկական նստատեղերի մասին:	1. Այո 2. Ոչ
12.	7 տարեկանից փոքր երեխաները պետք	1. Այո

	է երթևեկեն ավտոմեքենայի հետևի նստարանին նստած և ամրագոտին ամրացրած:	2. Ոչ 3. Չգիտեմ
13.	Մանկական նստատեղերի օգտագործումը կախված է ավտոմեքենայի արագությունից:	1. Այո 2. Ոչ 3. Չգիտեմ
14.	0-12 տարեկան երեխաների համար օգտագործվում է ավտոմեքենայի նստատեղերի միևնույն տեսակը՝ անկախ տարիքից:	1. Այո 2. Ոչ 3. Չգիտեմ
15.	Ավտոմեքենայի մանկական նստատեղը կարելի է տեղադրել ինչպես վարորդի կողքի նստարանին, այնպես էլ հետևի նստարանին:	1. Այո 2. Ոչ 3. Չգիտեմ
16.	Մինչև մեկ տարեկան երեխաները ավտոմեքենայով երթևեկելիս պետք է նստեն մանկական նստատեղի մեջ, որը տեղադրված է մեքենայի հետևի նստարանին դեմքով դեպի դիմապակին:	1. Այո 2. Ոչ 3. Չգիտեմ
Այս բաժնում ընդգրկված հարցերը վերաբերվում են ավտոմեքենայի մանկական նստատեղերի և դրանց մասին օրենքի նկատմամբ Ձեր վերաբերմունքին:		
17.	Ի՞նչ եք կարծում նշված տարբերակներից ո՞րն է ավելի անվտանգ մեքենայով երթևեկող երեխայի համար:	1. Հետևի նստարանին մեծահասակի գրկում նստելը 2. Առջևի նստարանին մեծահասակի գրկում նստելը 3. Հետևի նստարանին ամրագոտիով կապված միայնակ նստելը 4. Առջևի նստարանին ամրագոտիով կապված միայնակ նստելը 5. Առջևի նստարանին տեղադրված մանկական նստատեղի մեջ միայնակ նստելը 6. Հետևի նստարանին տեղադրված մանկական

		նստատեղի մեջ միայնակ նստելը
18.	Ի՞նչ եք կարծում արդյոք անհրաժեշտ է հատուկ օրենք ընդունել, համաձայն որի, Հայաստանում սեփական մեքենայով երթևեկելիս բոլոր երեխաները պետք է անպայման նստեն մանկական նստատեղերի մեջ:	1. Այո 2. Ոչ 3. Չգիտեմ
19.	Արդյո՞ք կգնեիք մեքենայի մանակական նստատեղ երեխայի անվտանգ երթևեկության համար, եթե օրենքով սահմանված կարգով դրանք անվճար չտրամադրեին Ձեզ:	1. Այո 2. Ոչ 3. Դա կախված է մի շարք հանգամանքներից 4. Դրա կարևորությունը չեմ տեսնում
20.	Կարծում եք կարևո՞ր է փոխել մեքենայի մանկական նստատեղը երեխայի տարիքին զուգահեռ:	1. Այո 2. Ոչ 3. ԻՆձ համար միևնույնն է
21.	Արդյո՞ք կարծում եք, որ բավարար տեղեկացված եք, թե ինչպես պետք է ճիշտ օգտագործել մեքենայի մանկական նստատեղը:	1. Այո 2. Մի փոքր 3. Ոչ
22.	Դուք կամ Ձեր ընտանիքի անդամները կցանկանայի՞ն ավելի շատ գիտելիքներ ստանալ մեքենայի մանկական նստատեղերի վերաբերյալ:	1. Այո 2. Ոչ 3. Ինձ համար միևնույն է
23.	Ձեր կարծիքով, ո՞րն է ամենակարևոր գործոնը, որը պետք է հաշվի առնել մեքենայի մանկական նստատեղ գնելիս: (***<u>Խնդրում եմ ընտրել միայն մեկ գործոն</u>***):	1. Անվտանգությունը 2. Գինը 3. Բռենդը 4. Ձևը 5. Որակը 6. Հարմարավետությունը 7. Այլ_____(***Խնդրում, եմ նշեք Ձեր տարբերակը***)

24.	Ձեր կարծիքով մեքենայի մանկական նստատեղերը թա՞նկ են:	1. Այո 2. Ոչ 3. Ինձ համար միևնույնն է:

Հետևյալ բաժնում ներկայացված հարցերը վերաբերվում են ավտոմեքենայի մանկական նստատեղերի օգտագործմանը՝ մանկապարտեզ հաճախող Ձեր ամենափոքր երեխայի համար:

25.	Դուք ունե՞ք մեքենայի մանկական նստատեղ:	1. Այո 2. Ոչ (***<u>խնդրում եմ, անցեք համար 31 հարցին</u>***)

26. Ներկայացված մանկական նստատեղերից ո՞րն է ավելի համապատասխանում այն նստատեղին, որը Դուք ունեք այժմ:

			***<u>Խնդրում եմ նշել Ձեր տարբերակը՝</u>*** _____ _____ _____
1. Հետ նայող նստատեղ	2.Առաջ նայող նստատեղ	3. Առանց մեջքի նստատեղ	4. Այլ տեսակի նստատեղ

27.	Ու՞մ խորհրդով եք օգտագործում մեքենայի մանկական նստատեղը:	1. Բուժաշխատողի 2. Իմ ընկերների 3. Տեսել եմ ինտերնետում 4. Տեսել եմ հեռուստացույցով 5. Այլ _____***(խնդրում եմ, գրեք Ձեր տարբերակը)***
28.	Մեքենայի մանկական նստատեղը տեղադրելիս օգտվու՞մ եք արդյոք հատուկ ցուցումներից:	1. Այո 2. Ոչ 3. Ցուցումներ չկան
29.	Մեքենայի մանկական նստատեղը Ձեր մեքենայի ո՞ր մասում եք սովորաբար տեղադրում:	1. Առջևի նստարանին 2. Հետևի նստարանին ձախ կողմում 3. Հետևի նստարանին մեջտեղում 4. Հետևի նստարանին աջ կողմում

30.	Ի՞նչ հաճախականությամբ եք օգտագործում մեքենայի մանկական նստատեղը Ձեր երեխայի հետ Ձեր ընտանիքին պատկանող մեքենայով երթևեկելիս։	1. Միշտ (***Անցեք 33 հարցին)*** 2. Հաճախ (***Անցեք 33 հարցին)*** 3. Երբեմն (***Անցեք 33 հարցին)*** 4. Հազվադեպ (***Անցեք 32 հարցից)*** 5. Երբեք (***Անցեք 32 հարցին)***
31.	Եթե Ձեզ անվճար դրամադրվեր Ձեր երեխայի տարիքին, քաշին և հասակին համապատասխանող ավտոմեքենայի մանկական նստատեղ, կօգտագործե՞ք այն Ձեր երեխայի համար մեքենայով երթևեկելիս	1. Այո (***Անցեք 33 հարցին)*** 2. Ոչ
32.	Ի՞նչն է պատճառը, որ չեք օգտագործում մեքենայի մանկական նստատեղ Ձեր երեխայի հետ մեքենայով երթևեկելիս։	1. Կարիքը չեմ տեսնում 2. Անհարմարավետ է 3. Իմ երեխան լավ չի զգում իրեն այդտեղ նստած 4. Դժվարանում եմ տեղադրել 5. Այլ (***խնդրում եմ, նշեք Ձեր պատճառը)***_____
Սոցիալ-ժողովրդագրական ցուցանիշներ		
33.	Քանի՞ տարեկան եք այժմ։	_____տարեկան
34.	Ձեր ամուսնական կարգավիճակը	1. Ամուսնացած 2. Բաժանված 3. Այրի 4. Միայնակ
35.	Նշեք Ձեր ստացած կրթության ամենաբարձր մակարդակը	1. Դպրոց 2. Միջին մասնագիտական 3. Ինստիտուտ/Համալսարան 4. Հետդիպլոմային/Ասպիրանտուրա
36.	Միջինում ամսական որքա՞ն գումար է ծախսում Ձեր ընտանիքը։	1. 50 000 դրամից պակաս 2. 50 000 - 100 000 դրամ

		3. 101 000 - 200 000 դրամ 4. 200,001 - 300,000 դրամ 5. 300 000 դրամից ավելի 88. Չգիտեմ/հրաժարվում եմ պատասխանել
37.	Քանի՞ մեքենա ունեք Ձեր ընտանիքում։	1. Մեկ մեքենա 2. Երկու մեքենա 3. Երկուսից ավելի մեքենա
38.	Խնդրում եմ նշել Ձեր մեքենայի մակնիշը և տարեթիվը, որով սովորաբար երթևեկում է Ձեր երեխան։	_____տարեթիվ _____մոդել
ՇՆՈՐՀԱԿԱԼՈՒԹՅՈՒՆ ՄԱՍՆԱԿՑՈՒԹՅԱՆ ՀԱՄԱՐ		

Appendix 3: Consent form English

American University of Armenia
Institutional Review Board #1

Consent form

Knowledge, attitude and practice on car safety seats: A cross-sectional survey of Armenian parents living in Yerevan.

Hello, my name is Zhanna Sargsyan. I am a final year graduate student at the School of Public Health at the American University of Armenia. Our department is conducting a study to better understand the knowledge, attitude and practice regarding car safety seats among Armenian parents of preschool aged children.

We randomly choose 31 kindergartens located in Yerevan. From these chosen kindergartens, 310 parents who have up to 6 years old child/children and a care in their household will participate in this study. Your kindergarten also has been chosen and You are one of 10 individuals from this kindergarten whom we invite to participate in the study

Your participation only involves self-completion of a questionnaire that should take no longer than 10-15 minutes. You can take it home with you and bring back tomorrow morning when you will come to kindergarten with your child. Your name, your child name or any contact information such as home address or phone numbers will not be asked. Nobody except research team will have access to the data you will provide. Your responses to the questions will contribute to this project and your answers will be put together with the answers of other participants.

Your participation in this study is voluntary. There is no penalty if you decline to take part in this project. You may refuse to answer any question you feel uncomfortable with. There are no known risks to you and your child, as well as to his/her future attendance to the kindergarten if you participate in the study. You will not gain any financial compensation or other personal benefits by participating in this study, but Your honest answers will help us to better understand the situation regarding car safety restraints, which later can lead to improved management of road safety in Armenia.

If you have any questions regarding this study you can contact the Principal Investigator Tsovinar Harutyunyan by this e-mail: Tsovinar@aua.am. If you feel you have not been treated fairly or think you have been hurt by joining the study you should contact Human Subject Protection Administrator in the American University of Armenia Varduhi Hayrumyan by this phone number: (37460) 612617. Do you agree to participate? (YES or NO) Thank you.

Appendix 4: Consent form Armenian

Հայաստանի Ամերիկյան Համալսարան
Գիտահետազոտական Էթիկայի թիվ 1 Հանձնաժողով
Իրազեկ Համաձայնության ձև

Ավտոմեքենայի մանկական նստատեղերի վերաբերյալ գիտելիքների, վերաբերմունքի և վարվելակերպի գնահատում

Բարև Ձեզ: Իմ անունը Ժաննա Սարգսյան է: Ես Հայաստանի Ամերիկյան համալսարանի Հանրային առողջապահության ֆակուլտետի մագիստրատուրայի ավարտական կուրսի ուսանող եմ: Հանրային առողջապահության ֆակուլտետը կատարում է հետազոտություն, որի նպատակն է ավելի լավ հասկանալ ավտոմեքենայի մանկական նստատեղերի մասին գիտելիքները, վերաբերմունքը և վարվելակերպը նախադպրոցական տարիքի երեխաներ ունեցող հայ ծնողների շրջանում:

Երևան քաղաքի մանկապարտեզների ցանկից մենք պտահականության սկզբունքով ընտրել ենք 31 մանկապարտեզ: Ընտրված մանկապարտեզներից 310 ծնողներ, ովքեր ունեն մինչև 6 տարեկան երեխա/երեխաներ և իրենց ընտանիքին պատկանող ավտոմեքենա, կմասնակցեն այս ուսումնասիրությանը: Մանկապարտեզը, ուր հաճախում է Ձեր երեխան, նույնպես ընտրվել է և Դուք այս մանկապարտեզի 10 ծնողներից մեկն եք, ում մենք հրավիրում ենք մասնակցել այս ուսումնասիրությանը:

Հետազոտության համար անհրաժեշտ է, որ Դուք ինքնուրույն լրացնեք այս հարցաթերթիկը, ինչը չի գերազանցի 10-15 րոպեն: Դուք կարող եք վերցնել այն Ձեզ հետ, լրացնել և վերադարձնել վաղը, երբ Ձեր երեխային առավոտյան մանկապարտեզ բերեք: Հարցաթերթիկում չկան անձնական բնույթի հարցեր, ինչպիսիք են Ձեր կամ Ձեր երեխայի անունը, հասցեն, հեռախոսահամարը և այլն: Հետազոտության խմբի անդամներից բացի ոչ մեկին հասանելի չեն լինի Ձեր տված պատասխանները: Ձեր տված անհատական պատասխանները և մեր մյուս մասնակիցների պատասխանները կհավաքվեն մեկ տեղում և կօգնեն այս հետազոտության իրականացմանը:

Ձեր մասնակցությունը այս ուսումնասիրությանը կամավոր է: Դա Ձեր իրավունքն է համաձայնվել կամ հրաժարվել մասնակցելուն՝ առանց որևէ բացասական հետևանքների: Հարցաթերթիկը լրացնելիս Դուք կարող եք հրաժարվել պատասխանելուց այն հարցերին, որոնք Ձեզ դուր չեն գալիս: Ուսումնասիրությանը Ձեր մասնակցությունը որևէ ռիսկ չի ենթադրում Ձեր կամ Ձեր երեխայի համար և

որևէ կերպ չի կարող անդրադառնալ Ձեր երեխայի հետագա մանկապարտեզ հաճախելիության վրա: Ուսումնասիրությանը Ձեր մասնակցությունը չի ենթադրում որևէ ֆինանսական փոխհատուցում կամ ուղղակի շահ Ձեզ համար, սակայն Ձեր անկեղծ պատասխանները կօգնեն մեզ իրականացնել այս ուսումնասիրությունը, որի արդյունքները շատ արդյունավետ կարող են լինել Հայաստանի ճանապարհատրասպորտային անվտանգության զարգացման համար:

Այս հետազոտության վերաբերյալ հարցեր ունենալու դեպքում կարող եք զանգահարել հետազոտության համակարգողին՝ Ծովինար Հարությունյանին Tsovinar@aua.am էլեկտրոնային հասցեով: Եթե Դուք կարծում եք, որ հետազոտության ընթացքում Ձեզ լավ չեն վերաբերվել և/կամ հետազոտությունը Ձեզ վնաս է հասցրել, կարող եք կապնվել Հայաստանի Ամերիկյան Համալսարանի Էթիկայի հանձնաժողովի համակարգող Վարդուհի Հայրումյանի հետ հետևյալ հեռախոսահամարով՝(37460) 612617 :

Դուք համաձա՞յն եք մասնակցել այս հետազոտությանը: (Այո, Ոչ): Շնորհակալություն:

Appendix 5: Journal form

JOURNAL FORM

ID-s *	Date	Time	Recruitment results		Completion results	Characteristics (refusals)	
			Mother: 1 Father: 0	Agreed: 1 Not eligible person: 2 Refused to participate: 3	Returned completed: 1 Returned not completed: 2 Did not return: 3	Female: 1 Male: 0	**Why not?** Does not have time: 1 Does not want: 2 Did not answer: 3 Others 4 (Leave comment)

*The ID will start from the kindergarten ID and will continue with the number from 01 until the required cluster size is obtained (10 parent from each kindergarten).

Picture 1: Haddon Matrix

Haddon Matrix applied to the risk factors for road traffic crash injuries among children

	Child factors	Vehicle and safety equipment	Physical environment	Socioeconomic environment
Pre-event	Age; gender; lack of supervision; risk-taking; impulsive behaviour; disobedience; lack of police enforcement.	Lack of roadworthiness of vehicle; poor lighting; poor state of brakes; speeding; overloading.	Poor road design; lack of public transport; no enforcement of speed limits; no safety barriers; lack of alcohol laws; poor infrastructure for pedestrian safety.	Poverty; single-parent family; large family size; poor maternal education; lack of awareness of risks among caregivers, childcare providers and educators.
Event	Size and physical development of child; lack of equipment to protect occupants, or equipment improperly used; underlying conditions in child.	Child restraints and seat-belts not fitted or incorrectly used; bicycle and motorcycle helmets not used; poor design of vehicle for protection in crashes; no rollover protection.	Roadside objects such as trees and poles.	Lack of safety culture in the car and on the road.
Post-event	Child's lack of resilience; child's general condition; lack of access to appropriate health care; post-injury complications.	Difficult access to victim; lack of trained health-care and rescue workers.	Lack of availability of adequate pre-hospital care, acute care and rehabilitation.	Lack of culture of supporting injured people; no first aid given at scene.

Source: Peden M, Oyegbite K, Ozanne-Smith J, et al. World report on child injury prevention. *World Heal Organ*. https://www.ncbi.nlm.nih.gov/books/NBK310641/pdf/Bookshelf_NBK310641.pdf. Accessed January 17, 2018

Picture 2: CSS types