

Knowledge and Attitudes of Northern Cypriot Parents about Children Safety Carriage in Cars

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Cite this article as: Dalkan C, Mammadov E, Tosun Ö, Bahçeciler N. Knowledge and Attitudes of Northern Cypriot Parents about Children Safety Carriage in Cars. *Cyprus J Med Sci* 2018; 1: 4-8.

BACKGROUND

The purpose of the study was to assess the knowledge levels and attitudes of Northern Cypriot parents about child passenger safety and to determine the need for parental education regarding this issue.

MATERIALS and METHODS

This was a planned cross-sectional study. The questionnaire comprised two parts. The first part included five multiple-choice questions, which were used to evaluate the level of knowledge regarding child passenger safety according to the recommendations of the American Academy of Pediatrics. The second part was designed as a five-point Likert scale and included questions regarding the behavior and attitude of parents toward child passenger safety.

RESULTS

A total of 500 questionnaires were distributed and 377 participants responded, with a response rate of 75.4%. The mean±standard deviation score from the multiple-choice questions regarding knowledge about child passenger safety was 2.83±1.11. Only 17.4% of the parents with children aged 0-2 years knew that children should be placed in a rear-facing car seat at that age, 80% of parents of the children in the 2-6 years age group knew that the child should be placed in a forward-facing seat at that age, while only 39.3% of parents of children in the 6-12 years age group were aware that the child should be placed in a belt-positioning booster seat.

CONCLUSION

This study emphasized on the less knowledge and incorrect attitudes of parents about child restraint seat (CRS) in Northern Cyprus compared to those in the developed countries. The result highlights the urgent need for social and governmental programs about CRS in our country.

Keywords: Car safe, accident, children, Cyprus, parents

INTRODUCTION

According to the World Health Organization (WHO), "Every day around the world the lives of more than 2000 families are torn apart by the loss of a child to an unintentional injury or so-called 'accident' that could have been prevented." According to the WHO statistics, road traffic accident is the 2nd most common cause for death among individuals aged 5-14 years and the most common reason for 14-19 years Road accidents is the eighth most common reason for losing children in all childhood period. This striking statistical data suggests that governments, social organizations, and health providers should educate families and improve laws about protection of their children from accidents. It is well documented that child safety seats reduce the injury risk by 71-82% (1, 2) and reduce death by 28% (3).

The policy statement of American Academy of Pediatrics (AAP) about the children restraint system to maximize safety of children passengers is based on four recommendations:

This study was presented at the 53th Turkish Pediatric Congress, May 14 - 18, 2017, Kyrenia, Cyprus.

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Received: 13.12.2017

Accepted: 05.01.2018

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1. Rear-facing car safety seats for most infants up to 2 years of age;
2. Forward-facing car safety seats for most children through 4 years of age;
3. Belt-positioning booster seats for most children through 8 years of age and
4. Lap-and-shoulder seat belts for all who have outgrown booster seats (4).

In Northern Cyprus (NC), child passenger safety regulations were added to the law in December 2012. This legal change was late and public was not enforced for this laws. The purpose of this study was to identify parental knowledge and attitude toward child passenger safety.

MATERIALS and METHODS

This was a planned cross-sectional study performed between March 2016 and May 2016. A self-structured questionnaire was prepared using Google Forms (Google Inc.; CA, New York, USA) and was distributed among the parents of pediatric patients who were admitted to Near East University Hospital. In addition, questionnaires were distributed among pregnant women and their partners during the routine obstetric follow-up. The survey was electronically distributed by sharing the link of the questionnaire with the respondent via email. Verbal consent was obtained from all individuals attending the survey.

The questionnaire consisted of two parts. The first part included five multiple-choice questions that were used to evaluate the level of knowledge about child passenger safety. The child passenger safety questions were prepared according to the recommendations of the AAP (4). Each correct answer was scored as one point.

The second part was designed as a five-point Likert scale and comprised questions regarding the behavior and attitude of parents toward child passenger safety.

Ethics committee approval was received for this study from the ethics committee of Near East University School of Medicine.

Statistical Analysis

Descriptive statistics for all demographic variables and survey questions were calculated. For categorical variables, frequency and percentage were calculated, while for continuous variables, arithmetic mean±standard deviations were calculated. The Kolmogorov-Smirnov normality test was applied to understand the distribution properties of the continuous variables. Depending on the results, the Student's t-test was applied for comparison of two-group hypothesis tests. For categorical variable comparisons, the Pearson Chi square or Fisher's exact test was applied. To investigate the possible associations between variables, the Spearman rank correlation analysis was performed. The level of significance was accepted as 0.05. All statistical calculations were performed with SPSS (Statistical Package for Social Sciences) 21.0 (IBM Corp.; Armonk, NY, USA) software.

RESULTS

A total of 500 questionnaires were distributed and 377 participants responded, with a response rate of 75.4%. There was a female predominance in the group (63.9%). Respondents were mostly in the 25-40 years age group (63.1%) and were highly

educated (graduated more than university; 87.2%). Most of the respondents had an income of more than 1000 USD per month, which is nearly twice more than the minimum wage in NC. 87.5% of the respondents owned a vehicle (Table I).

The mean score from the multiple-choice questions regarding the knowledge of child passenger safety was 2.83±1.11 SD. Female respondents scored higher points than the male respondents, but there was no significant difference ($p=0.125$). Respon-

TABLE I. Demographic characteristics of participants

	Number	Percentage
Gender		
Male	136	36.1%
Female	241	63.9%
Age (years)		
18-24	44	11.7%
25-40	238	63.1%
41-59	84	22.3%
Over 60	11	2.9%
Education		
Primary school	7	1.9%
High school	41	10.9%
University	192	50.9%
Post-graduate	137	36.3%
Monthly income		
No income	57	15.1%
Under 1000 USD	132	35%
Over 1000 USD	188	49.9%
Number of children		
No children	95	25.2%
1	150	39.8%
2	116	30.8%
More than 3	16	4.2%
Vehicle possession		
Yes	330	87.5%
No	47	12.5%
USD: American dollar		

TABLE 2. Comparison of scores of knowledge level of the respondents according to gender, having children, and possession of a vehicle

	Mean±SD	p value
Male	2.71±1.21	0.125
Female	2.90±1.10	
Child +	2.89±1.10	0.04
Child -	2.64±1.12	
Car owner +	2.84±1.11	0.585
Car owner -	2.74±1.09	

TABLE 3. Correct answers of parents about carrying method of their children according to age groups of children

Age intervals of participants' children (years)	Questions about carrying method of children	Number of respondents with correct answers	Total	Percentage
0-2	When to start using CRS?	74	103	72%
	Rear-facing seats	18	103	17.4%
2-6	Forward-facing seats	98	122	80%
6-12	Belt-positioning booster seats	35	89	39.3%

CRS: child restraint seat

TABLE 4. Parents' behavior and attitude toward child passenger safety (Likert scale: 1 strongly disagree, 5 strongly agree)

Behavior and attitude questions	Likert scale points distribution (percentage)					Mean±SD
	1	2	3	4	5	
While unsafe drive	11(2.0)	2 (0.5)	8 (2.1)	47(12.5)	309 (82)	4.7±0.79
While safe drive (long distance)	47 (12.5)	72 (19.1)	82 (21.8)	66 (77.5)	110 (29.2)	3.0±1.15
While safe drive (short distance)	14 (3.7)	39 (10.3)	72 (19.1)	98 (26)	154 (40.8)	3.32±1.39
During stop at traffic lights	73 (19.4)	83 (22)	78 (20.7)	54 (14.3)	89 (23.6)	3.01±1.45
I don't accept keeping my child back seat alone	150 (39.8)	36 (9.5)	43 (11.4)	34 (9)	114 (30.2)	2.8±1.71
I feel anxious about leaving child sitting alone in CRS in the rear seat	323 (85.7)	13 (3.4)	15 (4)	6 (1.6)	20 (5.3)	1.37±1.02
Child can travel on adult lap on rear seat	289 (76.7)	30 (8)	28 (7.4)	11 (2.9)	19 (5)	1.52±1.09
CRS is a waste of money	308 (81.7)	21 (5.6)	22 (5.8)	3 (0.8)	23 (6.1)	1.44±1.07
I got information about car safety seat easily	43 (11.4)	31 (8.2)	98 (26)	67 (17.8)	138 (36.6)	3.6±1.35
Parents should be role model for children	12 (3.2)	2 (0.5)	10 (2.7)	37 (9.8)	316 (83.8)	4.71±0.82
Child passenger safety rules are not negotiable	25 (6.6)	3 (0.8)	10 (2.7)	31 (8.2)	308 (81.7)	4.58±1.07
We are informed enough about children safety car seat	120 (31.8)	83 (22)	101 (26.8)	30 (8)	43 (11.4)	2.45±1.32
Governmental organizations spend enough effort on child passenger safety	188 (49.9)	94 (24.9)	56 (14.9)	11 (2.9)	28 (7.4)	1.93±1.19

CRS: child restraint seat

TABLE 5. Correlation coefficients between perception of child vulnerability against traffic accidents with age, income, education level, and fastening of seat belts (*p<0.05)

	Fastening of seat belt	While unsafe drive	While safe drive (long distance)	While safe drive (short distance)	During stop at traffic lights
Fastening of seat belt		0.270*	0.214*	0.123*	0.103*
Education level	0.190*	0.023	0.242*	0.061	0.116*
Income	0.168*	0.063	0.164*	0.057	0.089
Age	0.222*	0.123*	0.194*	0.157*	0.108*

dents who owned a vehicle scored higher points compared to their counterparts without significant statistical difference (p=0.585). Respondents who had children scored significantly higher points than those without children (p<0.05; Table 2).

The participants having children were also evaluated for correct answers to the questions regarding child transportation in the vehicle according to age. Although only 17.4% of parents with children aged 0-2 years knew that at that age, children should be placed in a rear-facing car seat, 72% of them were aware that a child should be transported in a car seat starting from birth. In addition, 80% of parents of the children in the 2-6 year age group knew that at that age, the child should be placed in a forward-facing seat, while only 39.3% of the parents with children in the 6-12 age group were aware that the child had to be placed in a belt-positioning bolster seat (Table 3).

The attitude of respondents toward child restraint seat (CRS) was positive; most of them agreed that child passenger safety rules are not negotiable, keeping child alone and restrained in the back seat is not a great issue, and parents should be role models for children regarding transportation safety. In addition, more than a half of the respondents claimed that they reached the information about the car seats safety easily. Most of the respondents objected the traveling of the child on the lap of the adult at the back seat and do not believe that the car seat is a waste of money.

However, a great majority of the respondents have thought that governmental organizations are not taking enough efforts to inform people about child passenger safety (Table 4). The television has been chosen as the most preferred means of providing information about child passenger safety by the government (52.8%), followed by social media (18%), and billboards (13.8%).

The perception of respondents about vulnerability of the child against traffic accidents is listed in Table 5. The question was "When do you think a child is most vulnerable to a traffic accident?" and the respondents were asked to attempt the 5point Likert scale questionnaire. The normal expectation was to give high points to all instances, such as unsafe drive, short distance safe drive, long distance safe drive, and stop at traffic lights. The perception about child vulnerability in different driving scenarios showed positive correlation with age, income, and education level with statistical significance at many instances. At the same time, the respondents who fastened seat belts themselves showed strong and significant positive correlations about child vulnerability in all driving scenarios (Table 5).

DISCUSSION

Traffic accidents are one of the most important problems of NC, because safety and infrastructure of roads are not satisfactory. The death ratio depending on 100,000 cars population is 14.6, and the death ratio in 100,000 cars was reported as 16 in NC. On the contrary, those ratios were 3 and 6 in the United Kingdom (UK) and a mean of 5.7 and 11, respectively, in the European Union (EU) (5). These results show that the death risk is clearly very high in NC, compared to the EU and UK, which emphasizes the urgency of preventive strategies, such as education of families and improvement of the laws about safety transportation.

According to the world report on child injury prevention by the WHO, approximately 262,000 children died because of road traffic injuries, and this high ratio was almost 30% percent of all injury deaths among children. Unfortunately, road traffic injuries are also one of the leading causes of children disability (6). Therefore, the protection of children from accidents, death, and disability is very important. One of the ways to protect children from accidents is carrying them safely in our cars with the appropriate use of CRS according to regulations of AAP. A child correctly and safely carried in a car was reported 2.7 times more likely to survive after car accident (7).

The aims of this current study were to describe the knowledge levels, attitude, and the effect of psychosocial and demographic characteristics of Turkish Cypriot parents regarding child passenger safety. Unfortunately, our results emphasized intermediate to low correct knowledge and attitude about using CRS correctly in participants with lower and higher education, and high income. This study was conducted 4 years after the CRS laws were implemented in NC, and it is the first study in NC investigating families' knowledge and attitudes toward CRS.

Although parents accept the CRS safely for their children, the CRS is misused according to the current study; 30% percent of the participants who have children younger than 2 years did not start using CRS after birth and only 17.4% of them used rear-facing seats. Moreover, 20% of participants who have children between 2-6 years of age do not use seats, and only 39.3% of families who have children >6 years carried them correctly. Unfortunately, the correct answer ratios were extremely lower than those reported in previous studies (8-12). These results emphasize the urgency of the distribution of public information programs, particularly among those who have children aged <2 years. Only 7.4% of the participants could reach information on CRS easily, while 11.4% believed that governmental or-

ganizations spend enough effort to improve knowledge about CRS. Our results also suggest that national child injury prevention strategies in NC focusing on family education should start during pregnancy. Moreover, almost 40% of participants were not reluctant to keep their child at the back seat alone. This may be the most important factor that affected our participants' attitude who had children aged <2 years. In addition, more than half of the participants preferred television for this social program, and 18% of them preferred social media. The aim of the programs should focus on correct information on CRS, changing the beliefs and attitudes.

The trauma risk for children during accidents was accepted lower during safe long distance and during stop at traffic lights among participants. According to the WHO car crash report, a 1 km/h increase in speed raises the risk of serious and fatal injuries by 5% (6). However, our participants believed that the lowest risk was involved in long drives. In contrast, participants who fasten seat belts, had higher educational level, more income, and were older always considered their children vulnerable to traffic accidents.

In conclusion, this study emphasized that, parents have lower knowledge and un-correct attitudes about CRS of parents in NC compared to developed countries (10, 13-15). This result highlights the urgent need for social and governmental programs about child passenger safety in our country, including television programs or advertisements, which were the most preferred way for this population.

Ethics Committee Approval: Ethics committee approval was received for this study from the ethics committee of Near East University School of Medicine.

Informed Consent: Verbal informed consent was obtained from parents of the patients who participated in this study.

Peer-review: Externally peer-reviewed.

Author contributions: Concept - C.D., E.M.; Design - C.D., E.M.; Supervision - N.N.B.; Resource - C.D., E.M.; Materials - C.D., E.M., Ö.T.; Analysis and/or Interpretation - C.D., E.M., Ö.T., Literature Search - C.D., E.M.; Writing - C.D., E.M.; Critical Reviews - N.N.B.

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: The authors declared that this study has received no financial support.

Informed Consent: Verbal informed consent was obtained from patients' parents who participated in this study.

Peer-review: Externally peer-reviewed.

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