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Mandatory Child Restraints: A KAP Study among Parents and Nursery Instructors

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Authors' contributions

This work was carried out in collaboration between both authors. Authors EA and HS contributed in project writing, data gathering, monitoring and preparing the manuscript. Data sharing: Findings could be distributed by this journal to the related sections. Both authors read and approved the final manuscript.

Original Research Article

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ABSTRACT

Aims: New road traffic injury (RTI) laws in Iran still neglects the importance of child restraint in automobiles. The objective of this study is to determine the Knowledge, Attitude and Practice (KAP) on the mandatory use of child restraint among parents and nursery instructors.
Study Design: An observational KAP study
Place and Duration of the Study: City of Tehran capital of Iran, between June 2013 and November 2013.
Methodology: An observational KAP study was carried out (using a self-administered questionnaire and a Likert scale) on 403 parents, which children were less than 13 years old and nursery instructors both residing in Tehran by a stratified randomized sampling. Twelve elementary schools and six nurseries were selected randomly. Validity and reliability of questionnaires were determined using the content validity and test re-tests. Subjects were selected randomly and data was collected by trained interviewers, after obtaining consent forms from the subjects.
Results: The majority (71%) of parents was female, aged 36.7±5.6 (range: 25-59). Half of the parents did not have any knowledge about child restraint laws and its implementation in the country. The knowledge among subjects about different kinds of child restraints, according to the child's age and weight, was 22.6%. Only 28% of subjects use child restraints for their children. A significant difference was observed between subjects' use of

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child restraints and their region of residency. Low use of child restraints was observed among 30-40 years old age group (p=0.05). Willingness to a pay extra cost to buy a better quality of child restrain was 56%. Willingness to participate in a national child restraint educational program was of 70%. The rate of community agreement to a mandatory use of child restraint in the country was 85%.

Conclusion: Knowledge and practice related to usage and kind of child restraint adjusted with child weight were low among the parents and nursery instructors. The rate of a community agreement to set a mandatory use of child restraint in the country was high.

Keywords: Child restraint; mandatory; parents; nursery instructor; knowledge; attitude; practice.

1. INTRODUCTION

Road traffic injuries (RTIs) are one of the leading causes of death in Iran. In 2007-2008, 22 918 people from different age groups died as a result of RTIs. A big number of deaths from RTIs in the Eastern Mediterranean Region (EMR) occurred in Iran (about 30% of all fatal injuries in the region). Compared to other countries in the EMR, Iran is the third with the biggest population (about 13% of the total population in the EMR) but the first in the number of vehicles used (with 17,000,000 vehicle or 32% of the total of vehicles in the region). While the average of RTI deaths rates are 18.8 and 32.2 per 100 000 population in the world and in the EMR respectively, in Iran the average of deaths is 35.8 [1-8]. During recent years, a national campaign has started to help decrease the rates of fatal and non fatal RTI. Most of the rules and regulations on road safety in Iran have been established almost a decade ago and the child restraint law in Iran is not mandatory [9]. New laws that address crimes while driving were approved by the parliament of the Islamic Republic of Iran in February 27, 2011 and were adopted by the Guardian council on March 13, 2010. Although the new laws on seat belt use for all vehicle passengers have been enforced, attention to child restraint is still neglected. The objective of this study is to determine the Knowledge, Attitude and Practice (KAP) on the mandatory use of child restraint among society.

2. MATERIALS AND METHODS

An observational KAP study was carried out (using a self-administered questionnaire and a Likert scale) on 403 parents, which children were less than 13 years old and nursery instructors, residing in Tehran by stratified randomized sampling. Tehran was divided in three regions by stratified sampling (north, center and south). From all nurseries and elementary schools twelve schools and 6 nurseries were chosen randomly. Subjects were selected randomly, as well from mentioned schools and nurseries. Validity and reliability of questionnaire were determined by content validity (CVI and CVR) and test re-tests. Questionnaire included 86 questions: 11 questions related to demographic factors, 29 questions related to levels of subjects' knowledge, 28 questions related to the subjects' attitude and 18 questions related to the subjects' practice. Data was collected by trained interviewers, after taking consent forms from all the subjects. The selected districts from north, center and south of Tehran were considered as affluent, middle income and deprived region respectively. Data was analyzed by SPSS software version 17.0. Knowledge, attitude and practice were calculated using a sum of total score in each domain and these scores were presented by percentile. The 25^{th}, 50^{th} and 75^{th} percentile were considered as low, moderate and good status of parents and nursery instructors' KAP respectively. Selected

region from north, center and south of Tehran were considered as rich, moderate and poor regions respectively. The significance level was considered as P=0.05.

3. RESULTS

The majority (71%) of parents was female, aged 36.7±5.6 (range: 25-59). Their educational level was: 12% high school and less, 41% diploma, 47% master degree level and more. Less than half of the subjects (45%) were housewives and 41% were employees. The medium family size was 4 members. Mean and SD age of the children was 7±3.4 years. Overall 55% of the family was male. Mean and SD children, weight was 24±11 kg. Overall 79% of families had their own car and at least 39% of the children used the family car every day. More than two-third of the children takes the rear seats while their parents are driving. Half of the parents did not have any knowledge about child restraints laws and its implementation in the country. Among subjects knowledge on different kinds of child restraints according to the child's age and weight was of 22.6%. Only 28% of the subjects use child restraint for their children. Parents and nursery instructors had moderate knowledge and attitude and low practice in child restraint usage (Table 1).

Table 1. Percentile of parents and nursery instructors' KAP on child restraint

Items	25th Percentile Low	50th Percentile Moderate	75th Percentile Good
Knowledge	0 (0.0%)*	187 (59.0%)	130 (41.0)
Attitude	0 (0.0%)	205 (51.0%)	78 (19.0%)
Practice	92 (22.8%)	151 (37.5%)	23 (5.7%)

**numbers in parenthesis are presented in percent*

A significant difference was observed between subject practice and their regions of residency (Table 2).

Table 2. Relationship subjects practice and region of residency

Region	25th Percentile Low	50th Percentile Moderate	75th Percentile Good
Affluent region	31	24	7
Middle income region	10	13	2
Deprived region	33*	92*	8*

** (p=0.01)*

Low practice was observed among 30-40 years old age group (p=0.05) (Table 3).

Table 3. Relationship of subjects' age and their practice

Age groups	25th Percentile Low	50th Percentile Moderate	75th Percentile Good
20-30	18	25	3
30-40	54*	85*	9*
40-50	15	31	11

** (p=0.05)*

Willingness to pay extra cost to buy a child restrain with better quality was 56%. Willingness to participate in a national child restraint educational program was 70%. The rate of

community agreement to a mandatory use of child restraint in the country was 85%. No significant difference was observed between subjects, KAP and their gender.

3.1 Knowledge

Overall, 79% of the children usually use the rear seat. Half of the subjects neither know implementation of the laws nor use the child restraint. About half of the subjects did not know about any regulation of child restraint installation. Knowledge about different kinds of child restraint according to the child's age was observed among 22.6% of subjects. Knowledge about effective indicators to choose child restraint was observed among 64.8% of subjects. As parents reported, the range of ages in which a child should use a child restraint was of 1 month to 6 years old. Based on the subject's opinion age of children using child restraint was 1±1 year. 28% of the subjects use child restraint for their children. Only 22% of subjects had a correct opinion on the safest place for children to sit. 80% of the subjects stated that prevention of occupant injury can be death with the use of seat belts receiving information about child restraint by self reading was 34% higher than other sources. Knowledge about how the child restraint must be correctly fastened was 37 %. Knowledge about adjusting child restraint use according to the age of the children was 34%. Knowledge about the instructions of child restraint use was 29%. Knowledge about the necessity of child restraint use according to the child's age and weight was 73% and knowledge about the best place for children to sit (rear seat) during driving was 66%. Decision making to buy and use a child restraint as soon as possible was 51%. Willingness to pay extra cost to buy a better quality child restrain was of 56%. More over a 62% of the subjects had no financial difficulty to buy a child restraint. Knowledge about how to use child restraints was 21%. Knowledge of the prevention of death and injury by using child restraint was 60%.

3.2 Attitude

65% of parents must to be ensured about the correct use of child restraint and 34% believed that child restraint is more important than toys and is as valuable as children's vaccination. 33% of subjects believed that public transportation must be equipped with child restraint devices and 36% of parents believed that it is the families' duty to buy a child restraint device to protect their children. Rate of agreement to make child restraint mandatory in the country was 85%.

3.3 Practice

Willingness to use child restraint while driving was 53% among subjects. Seat belt use by occupants was 62%. Child restraint use was 19%. The ability of parents to easily install the child restraint was 19%. 41% of subjects recommended the necessity of buying a child restraint by all parents, 53% of parents support the child restraint national programs and 58% obey the child restraint laws. Proper use of child restraint according to the child's weight and age was 42%.

4. DISCUSSION

The results of this study described the baseline KAP among parents and nursery instructors on child restraint use. Parents' and nursery instructors' practice was low. Overall, using a 86-questions questionnaire, the KAP study revealed gaps in parents' and nursery instructor's practice, knowledge and attitude concerning child restraint. No significant difference was

observed between subjects' KAP and their gender. This study found a significant relationship between practices and region of residency, age and residents of deprived region 16. The subjects aged 30-40 have a low practice among other regions and other age groups. Nearly half of the subjects did not know anything about regulation of child restraint installation and receiving information about child restraint was by self reading, which was higher than the other sources. In contrast with Thein study in Singapore 92.8% of subjects were aware of the child restraint law. The media plays an important role on information on child safety [9]. Subjects' educational levels were as: 12% high school and less, 41% diploma, 47% master level and more. Using of a child restraint among relatives was 47% in contrast with Carol study, in which mothers with no formal education, high parity, who smoke tobacco, had lower household income and have multiple births, were consistently more likely to not use a car/booster seat [10]. Child safety seats have shown to reduce the risk of infant deaths in car passengers to 71%, and by 54% of toddlers aged 1–4 years [11]. Many of the childhood deaths and serious injuries caused by motor vehicle accidents could be prevented throughout a correct installation and use of child restraints [12]. Knowing about how the child restraint is to be fastened correctly was 37 %. Parents and professionals agree that the traditional installation procedures for child safety seats are not easy. A 1996 study by the Ontario, Canadian government made several recommendations for Child restraint manufacturers. The recommendations included simplifying belt locking and tightening procedures and placing belt routing instructions to the car seat frame [13]. A common element of successful programs will be the use of multiple strategies targeted at different audiences to address three pivotal barriers to child restraint use: lack of awareness about how to install child restraints, the cost of child restraint, and child restraint legislation and enforcement. To maximize the likelihood of success, efforts should be targeted broadly to increase parents' awareness of the importance of child restraint use [14-16]. To create and implement a successful action plan, the program planner must collaborate with health professionals and other community members. This baseline information can also be used by child restraint manufacturers, government officials, law enforcement officers, health care systems and other organizations to understand the knowledge, attitude and practice deficiencies that lead to this preventable public health problem. Lack of child restraint use is a public health problem. Community opinion assessment is needed. Culture building related to child restraint use is one of the priorities. Child restraint enforcement with low cost and community participation is accomplished. To implement the child restraint use, all sectors need to help and cooperate. More attention and cooperation is needed by road traffic injury stakeholders. According to the international sanction which is a threat, governmental policy makers must to predict appropriate alternative markets or find sources to manufacture this product.

5. CONCLUSION

It is recommended to educate parents and nursery instructors especially those aged 30-40 years old and residents of deprived areas in this regard

6. FUNDING

This project was financially supposed by World Health Organization.

CONSENT

All authors declare that 'written informed consent was obtained from the patient (or other approved parties) for publication of this case report and accompanying images.

ETHICAL APPROVAL

All authors hereby declare that all experiments have been examined and approved by the appropriate ethics committee and have therefore been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki."

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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