Involving parents in road safety decision making: Keeping our children safe

Mohamed A. Hendaus1,2,3, Reem Wassef4, Marwa Salah4, Tasneem Riyad Abdel-karim4, Ahmed H. Alhammadi1,2,3

1Department of Pediatrics, Section of Academic General Pediatrics, Sidra Medicine, 2Department of Pediatrics, Hamad General Corporation, 3Department of Clinical Pediatrics, Weill-Cornell Medicine, 4Pediatric Residency Program, Hamad General Corporation, Doha, Qatar

Abstract

Purpose: The purpose of the study was to delineate parental concept of road safety in the state of Qatar, integrate parental thoughts and ideas into public safety, and share our data with authorities to assist in implementing campaigns against speeding in a country with a high rate of motor vehicle accidents. Methods: A cross-sectional prospective study was conducted at Hamad Medical Corporation (HMC), the only tertiary care and academic hospital in the state of Qatar. Parents of children younger than 18 years of age and residents of the State of Qatar were offered an interview survey. Results: A total of 200 questionnaires were completed (response rate = 98%). Approximately 80% of parents were in between 20 and 40 years of age, and 61% of them were females. Almost 40% of participating families reside outside of the city of Doha. Interestingly, only 1 in 2 parents thought their children were safe while riding with them in the car. Moreover, only 47% of parents always used car seats, seatbelts, and proper restraints. This is despite that nearly 82% of parents felt that these restraints protect children in case of an accident. Parents were also asked of the best place to receive information regarding road safety. Almost 50% preferred to receive the information through social media, whereas 44.3% opted for local television. Role modeling was also assessed and it showed that 85% of parents believed that the most effective way in teaching children and young people to use roads in a safe way is to always provide a positive role model when using the roads. Conclusion: A large proportion of residents in the state of Qatar perceive that children are not safe while commuting in roads. Social media, a space where most of our community inhabit, seems to be the best setting to target our people.

Keywords: Children, Qatar, road safety

Introduction

Road traffic injuries are a considerable constituent of the worldwide burden of disease and disability and, in many nations, are the main causes of death during childhood.1

In Arab countries with high income levels, motor vehicle deaths are higher compared with other countries with lower income.2

The state of Qatar is a relatively small country with estimated mid-year residents of 2,706,817.3

Qatar is also considered to have a young population where merely 1% of the population individuals are 65 years old and above.4

Role of parents in road safety has been studied, but there are still deficiencies in the literature about parental attitudes to road safety education.5,6 The education in which parents can have an impact on their children's road safety skills can be implemented via conscious teaching, and as role models on the road.7

Address for correspondence: Dr. Mohamed A. Hendaus, Department of Pediatrics, Sidra Medicine, Doha - 26999, Qatar. E-mail: mhendaus@yahoo.com

Access this article online

Quick Response Code: Website: www.jfmpc.com

DOI: 10.4103/jfmpc.jfmpc_195_18

How to cite this article: Hendaus MA, Wassef R, Salah M, Abdel-karim TR, Alhammadi AH. Involving parents in road safety decision making: Keeping our children safe. J Family Med Prim Care 2019;8:1476-80.
Materials and Methods

Study design, period, setting, and participants
We conducted a cross-sectional prospective study through an interview survey in the inpatient and outpatient department at Hamad Medical Corporation (HMC), the only tertiary care and academic hospital in the state of Qatar. The survey was offered to parents who have children younger than 18 years of age. We planned to recruit 200 participants as a convenient sample since there are no data in Qatar to calculate our sample size. In addition, there are no identical published studies to extrapolate the correct number of patients needed. The study was conducted between January 1, 2017 and March 30, 2017. We included parents of children younger than 18 years of age who visited the outpatient clinics for well child and sick visits. We also included parents of children who were admitted to the inpatient wards. No children were excluded. We utilized an anonymous modified interview-based assessment of parental acceptability and preferences with some information acquired from published studies,[5‑7] and modified it to meet our patient population cultures.

The Medical Research Center in our institution validated the questionnaire that was composed of three sections and a total of 24 items. The validation process was based on review by experts in the topic and by correlating the questions to published material. These sections addressed parents and children demographics, road rules general questions, and general road safety behavior.

Participants were directly approached by our team members in the inpatient pediatric wards and outpatient pediatric clinics. Verbal informed consent was obtained at the time of the interview and all materials were available in Arabic and English. Participants were informed as to why the information was being collected and how it would be used. Prior to the start of the interview, a statement was read to parents informing them that their participation was voluntary and we indicated that their answers were anonymous and confidential. A member of the research team verified that caregivers had understood the questions and answered any queries they had. Parents did not receive any type of compensation for participating in the study. This study was approved by Hamad Medical Corporation Medical Research Center with reference number 16420/16.

Statistical analysis
Quantitative data values are expressed as frequencies along with percentages. Descriptive statistics were used to summarize demographic and all other characteristics of the participants. Associations between two or more qualitative or categorical variables were assessed using Chi-square test. Pictorial presentations of the key results were made using appropriate statistical graphs. A two-sided P value <0.05 is considered to be statistically significant. All statistical analyses were done using statistical package SPSS, version 19.0 (IBM Corporation, Armonk, NY).

Results
A total of 200 questionnaires were completed (response rate = 98%). 77% of parents were in between 20 and 40 years of age, and 61% of them were females. Almost 40% of participating families reside outside of the city of Doha. Demographics and socioeconomic characteristics of parents are summarized in Table 1.

Only 47% of parents always used car seats, seatbelts, and proper restraints. This is in spite that nearly 82% of parents felt that these restraints protect children in case of an accident.

When asked if it is safe to exceed the speed limit if driving safely, 60% of parents believed that it was not a good idea. Moreover, 63% of parents were familiar with the prevalence of car accidents in Qatar and almost 50% were familiar with the rate of mortality and disability that arises from car crashes [Figure 1].

The concept of controlling speed limit was investigated, and it showed that 85% of parents agreed that the car speed limit should be preset by local authorities, whereas 70% believed that it would be wise to use electronic chips in car keys for monitoring speed. Parents also seemed to agree to the concept of keeping crashed cars on the side of roads (52.7%) and having billboards

| Table 1: Demographic data of participants |
|------------------------------------------|
| Parental Age                             | Number | Percentage |
| <20 yrs                                  | 8      | 4          |
| 20-29 yrs                                | 60     | 30         |
| 30-39 yrs                                | 94     | 47         |
| >40 yrs                                  | 38     | 19         |
| Gender                                   |        |            |
| Male                                     | 78     | 39         |
| Female                                   | 122    | 61         |
| Employment status                        |        |            |
| Not working                              | 68     | 34         |
| Working part time                        | 24     | 12         |
| Working full time                        | 103    | 51.5       |
| Student (full time)                      | 4      | 2          |
| Student (part time)                      | 1      | 0.5        |
| Place of Living                          |        |            |
| Doha                                     | 122    | 61         |
| Wakra                                    | 22     | 11         |
| Dukhan                                   | 2      | 1          |
| Alkhor                                   | 6      | 3          |
| Mesaied                                  | 4      | 2          |
| Alrayyan                                 | 24     | 12         |
| Other                                    | 20     | 10         |
| Level of Education                      |        |            |
| Less than high school                    | 24     | 12         |
| High school                              | 36     | 18         |
| College                                  | 43     | 22         |
| College graduate                         | 73     | 36         |
| Higher than college graduate             | 24     | 12         |
with messages saying “your family is waiting” (80.7%) would help prevent speeding [Figure 2].

Parents were also asked of the best place to receive information regarding road safety. Almost 50% preferred to receive the information through social media, whereas 44.3% opted for local television.

Role modeling was also assessed and it showed that 85% of parents believed that the most effective way in teaching children and young people to use roads in a safe way is to always provide a positive role model when using the roads.

It is worth mentioning that female parents were more open to the idea of the use of electronic chips in car keys for monitoring speed \( (P = 0.008) \). Also, highly educated parents felt that the primary responsibility for delivering road safety education lies within both parents and school \( (P = 0.001) \).

**Discussion**

This study aims to explore different factors leading to increased prevalence of road traffic accidents in the state of Qatar and different methods to minimize them. To the best of our knowledge, this is the first study of its kind in Qatar.

In February 2017, the number of speeding violations caught on radar in the state of Qatar was 106,360,\(^9\) which has shown a rise of 10% when compared with number of the same violations in February 2016.\(^9\)

Overall, our participants were more leaned toward adopting caution in the context of road safety. The majority of our participants were females and, hence, gender could have played a role. Cordellieri et al.\(^{10}\) investigated the gender effects in young users on road safety attitudes, behaviors, and risk perception. The study that included 2,681 young drivers showed that both males and females take same chances. However, males differed from females in the level of concern about this risk, with men being less concerned about the implication of a road accident. The authors suggested that the main difference between these two groups is not rigidly associated with the judgment of the perceived risk probability but rather to the level of concern resulted from the aftermaths of the risk.

Surprisingly, about one half of parents thought that it is okay to exceed the speed limit by 10 km/h on some occasions. Close to 80% of parents thought that a car accident at 100 km/h would be more detrimental than a car accident at 80 km/h. Abu-Zidan et al.\(^{11}\) studied youth traffic related injuries in the United Arab Emirates, a neighboring country. The study showed that the mean car speed was 97.2 with 42% of accidents at a speed higher than 100 km/h.

Another major issue investigated in our study was the proper use of restraints including seat belts and car seats. Although less than 50% of our parents used proper restraints, studies have shown that child restraints reduce the likelihood of a fatal crash by about 70% in infants and 54%–80% in young children.\(^12\) The American Academy of Pediatrics recommends that children use rear-facing car seats till the age of 2 years or until reaching the maximum height and weight for their seat. They also recommend the use of a booster seat until the age of at least 8 years and a height of 4 feet and 9 inches. They should be restrained in the rear seat of vehicles till the age of 13 years.\(^13\) In our study, we found that only a small proportion of parents (47%) always used them, in spite of most of them believing that it would protect their children in case of a car crash (82%). We believe this is related to lack of education on the importance of proper and consistent use of car seats and seat belts.

The role model of parents could be overlooked. Many caregivers and parents undermine how important their modeling behavior is during the early years of their children.\(^14\)

Childhood vulnerability in the context of road safety comprise of physical and functional. The former refers to their relative small size and the latter is attributed to the phase of perceptual and cognitive development.\(^15\)

Competencies could learned by observing others.\(^16\) Observational learning already exists at birth,\(^17\) and it is very important for developing complex abilities such as social openness, language, and the use of tools to achieve goals.\(^18\) Therefore, learning new proficiencies by observing adults is a cardinal process in cognitive development.\(^19\) Ferguson et al.\(^20\) investigated the relationship of parent driving records to the driving records of their children. The study showed that youngsters whose parents had committed three or more traffic

![Figure 1: General road information questions](image1.png)

![Figure 2: Road safety question](image2.png)
violations were 38% more likely to have had a traffic offense compared with children whose parents had none. Similarly, the offspring whose parents had three or more vehicle crashes were 22% more likely to have had at least one crash compared with children whose parents had no crashes.

We wanted to know where parents preferred to receive information regarding road safety. Almost 50% preferred to receive the information through social media, whereas 44.3% opted for local television.

Social media is very popular in Qatar, perhaps due to its easy access. A study conducted in 2016 showed that a vast majority of Qataris use social media in general, where WhatsApp being more attractive among the oldest group (older than 45 years) than the youngest group (18–24 years) (83% vs. 74%). Moreover, more than 90% of Facebook and WhatsApp users are daily users (94% and 93%).

There is some evidence that the use of social media for dissemination of health information is effective. Fear appeals in advertising is a powerful method to positively influencing attitude, intentions, and behaviors. Will et al. studied the efficacy of using a threat-appeal approach to inspire parents to put their children in booster seats and rear seats of vehicles. The authors used a video with a 6 min duration showing the risks and hazards that result from car collisions. The study has found that treatment groups’ sense of fear related to the collision and child passenger safety knowledge increased when compared with baseline and control groups. We believe that the use of social media and local TV will have the most impact to deliver information about road safety, perhaps using a fear appeal approach.

This study has its strengths, specifically both the quantitative and qualitative feedback. Our study will assist in designing a reasonable approach to keep children in Qatar safer from traffic collisions. On the other hand, this study also has limitations. We used a convenience sample. Moreover, the restraints to external validity are for the most part due to a very new idea especially in our geographical area. In addition, there could be a chance that there are specific characteristics related to parents’ insights in this subject that were not evaluated in this study. Furthermore, our study did not include data about pedestrians’ safety. Finally, we did not enquire in details about knowledge of parents on the proper installation of car seats and booster seats.

**Conclusion**

A large proportion of residents in the state of Qatar perceive that children are not safe while commuting in roads. Social media, a space where most of our community inhabit, seems to be the best setting to target our people.

**Financial support and sponsorship**

Nil.

**Conflicts of interest**

There are no conflicts of interest.

**References**

1. Global status report on road safety: Time for action. Geneva: World Health Organization, 2009. Available from: http://www.who.int/violence_injury_prevention/road_safety_status/2009/en/. [Last accessed on 2018 May 20].

2. Mamtani R, Al-Thani MH, Al-Thani A-AM, Sheikh JI, Lowenfels AB. Motor vehicle injuries in Qatar: Time trends in a rapidly developing Middle Eastern nation. Inj Prev 2012;18:130-2.

3. Monthly figures on total population. Ministry of Development Planning and Statistics. https://www.mdps.gov.qa/en/statistics1/StatisticsSite/pages/population.aspx. [Last accessed on 2018 May 20].

4. El-Menyar A, Abdelrahman H, Al-Hassani A, Ellabib M, Asim M, Zarour A, et al. Clinical presentation and time-based mortality in patients with chest injuries associated with road traffic accidents. Arch Trauma Res 2016;5:e31888.

5. Parental Attitudes to Road Safety Education Final Report. The Scottish Government. 2004. Available from: http://www.gov.scot/Publications/2004/10/20117/45447. [Last accessed on 2018 Jul 23].

6. Child–Parent Interaction in Relation to Road Safety. Department for Transport: London, 2008. Available from: http://webarchive.nationalarchives.gov.uk/20110509101621/http://www.dft.gov.uk/pgr/roadsafety/research/rsrr/theme1/no102safetyresearch.pdf.

7. Synthesis of Safety Research Related to Speed and Speed Management. U.S. Department of Transportation. Federal Highway Administration. July 1998. Available from: http://www.fhwa.dot.gov/publications/research/safety/98154/speed.cfm. [Last accessed on 2016 Nov 20].

8. Ministry of Development Planning and Statistics. Monthly census report march 2017. Available from: http://www.mdps.gov.qa/en/statistics/Statistical%20Releases/General/QMS/QMS_MDPS_38_Mar_2017.pdf. [Last accessed on 2018 Jul 22].

9. Ministry of Development Planning and Statistics. Monthly census report April 2016. Available from: http://www.mdps.gov.qa/en/statistics/Statistical%20Releases/General/QMS/QMS_2016_4_apr.pdf. [Last accessed on 2018 Jul 22].

10. Cordellieri P, Baralla F, Ferlazzo F, Sgalla R, Piccardi L, Giannini AM. Gender effects in young road users on road safety attitudes, behaviors and risk perception. Front Psychol 2016;7:1412. doi: 10.3389/fpsyg.2016.01412.

11. Abu-Zidan FM, Abbas AK, Hefny AF, Eid HO, Grivna M. Effects of seat belt usage on injury pattern and outcome of vehicle occupants after road traffic collisions: Prospective study. World J Surg 2012;36:255-9.

12. WHO Global status report on road safety 2015. Available from: http://www.who.int/violence_injury_prevention/road_safety_status/2015/en/. [Last accessed on 2018 Jul 22].

13. Child Passenger Safety. Committee on injury, violence, and poison prevention. Pediatrics 2011;127:e1050-66. doi: 10.1542/peds.2011-0215.

14. Adams JF. Impact of parent training on family functioning. Child Fam Behav Ther 2001;23:29-42.
15. Demetre JD, Lee DN, Pitcairn TK, Grieve R, Thomson JA, Ampofo-Boateng K. Errors in young children's decisions about traffic gaps: Experiments with roadside simulations. Br J Psychol 1992;83:189-202.

16. Petrosini L. "Do what I do" and "do how I do": Different components of imitative learning are mediated by different neural structures. Neuroscientist 2007;13:335-48.

17. Meltzoff AN, Kuhl PK, Movellan J, Sejnowski TJ. Foundations for a new science of learning. Science 2009;325:284-8.

18. Meltzoff AN, Decety J. What imitation tells us about social cognition: A rapprochement between developmental psychology and cognitive neuroscience. Philos Trans R Soc Lond B Biol Sci 2003;358:491-500.

19. Fenstermacher SK, Saudino KJ. Toddler see, toddler do? Genetic and environmental influences on laboratory-assessed elicited imitation. Behav Genet 2007;37:639-47.

20. Ferguson SA, Williams AF, Chapline JF, Reinfurt DW, De Leonards DM. Relationship of parent driving records to the driving records of their children. Accid Anal Prev 2001;33:229-34.

21. Media Use in the Middle East 2016. A Six-Nation Survey. Northwestern University, Qatar. Available from: https://www.qatar.northwestern.edu/docs/publications/research-media-use/2016-middle-east-media-use-report.pdf. [Last accessed on 2018 Jul 18].

22. Maher CA, Lewis LK, Ferrar K, Marshall S, De Bourdeaudhuij I, Vandelanotte C. Are health behavior change interventions that use online social networks effective? A systematic review. J Med Internet Res 2014;16:e40.

23. Tannenbaum MB, Hepler J, Zimmerman RS, Saul L, Jacobs S, Wilson K, et al. Appealing to fear: A meta-analysis of fear appeal effectiveness and theories. Psychol Bull 2015;141:1178-204.

24. Will KE, Sabo CS, Porter BE. Evaluation of the Boost 'em in the Back Seat Program: Using fear and efficacy to increase booster seat use. Accid Anal Prev 2009;41:57-65.