

## Attitudes, knowledge and behavior of parents regarding safety child occupant travel in Bahrain

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### ABSTRACT

**Objective:** The aim of this study is to investigate parents' attitudes, knowledge and behaviors regarding safe child occupant travel in Bahrain and to evaluate the risk factors associated with safe child occupant. **Design:** Cross-sectional Study. **Setting:** The City Center Mall in Bahrain **Method:** A questionnaire exploring attitudes, knowledge and behaviors regarding general road safety, as well as safe child occupant travel in particular, was completed by 187 participants. Data were collected over a two months period; September and October 2013. **Result:** The majority of participants in the current study were male and relatively well-educated. Participants in the current study were more likely to be: male and married. Responses to the questionnaire revealed that 64.7% of the parents studied agreed that children must travel in a specially fitted capsule. However, only 27.8% of the parents were using the child restraints for their children. Using Seat belt did not show any significant association with respondents' age( $p$ -value =0.73), gender( $p$ -value =0.41), nationality( $p$ -value =0.40), level of education( $p$ -value =0.06), or number of children( $p$ -value =0.59). The results showed that there was no significant association between type of restraint used for Children and respondents' age( $p$ -value =0.10), gender ( $p$ -value =0.12) and nationality( $p$ -value =0.95). However, there was significant association with the level of education ( $p$ -value =0.02) and number of children ( $p$ <.001). **Conclusion:** the findings of this study revealed that attitudes, knowledge and behaviors regarding general road safety were fairly acceptable. However, measures for safe child occupant travel and the use of a specially fitted capsule for children were not frequently implemented. These findings suggest that it is important to educate parents about the importance of child restraint principles and process for appropriate use. These findings should be taken seriously for those who are responsible in the government, health care and media to reach an acceptable degree of awareness and knowledge.

### Introduction

Road Traffic Accidents (RTAs) continue to have major implication on medical, social and financial status of the victims and injures patients. There is a major change in family dynamics following an accident or disability. Huge amounts of medical resources are involved in caring for accident victims and injured patients (1).

RTAs are the primary cause of death and injuries in the worldwide in general and the developing countries in particular. The WHO estimated that 1.17 million deaths occur each year worldwide due to RTAs. About 70% (15-44 years old) of the deaths occur in developing countries, and accounts for more than 50 million disabilities and injured patients (2). Compared to European countries and USA, Arab countries have a very high road accident

fatality rate. In 2000, 14.8, 11.7, and 7.3 persons per 10,000 vehicles were killed in Saudi Arabia, United Arab Emirati and Qatari road traffic accidents, respectively. The rates (1999 statistics) were, for example, approximately 1.8 for Finland, 2.4 for France, 1.5 for UK, and 1.9 for USA (3).

### **Literature Review:**

In Bahrain RTAs deaths are 12.1 per 100,000 population, which is the lowest rate in the GCC countries. The frequency of gender are 77.5% males and 22.5% females, where the highest rate of deaths was in UAE & Iraq which account for 38/100,000 population.

In 2007, Global Road Safety reported 91 individuals deaths (91% males, 9% females) in Bahrain, secondary rate after Qatar (4). RTAs cost Bahrain economy more than half millions BD (\$1.33 million) in 2010. With an accident for every 6.7 minutes. Bahrain most dangerous road was Shaikh Isa bin Salman Highway in that year. The peak time of accidents was between 8pm-9pm while the safest time was between 4am-5am (5).

Death rate per 100,000 is one of the most important studies that done by "World Health Rankings" which is a website concerned in the researches that make our live longer and better. In this study ,we found that Bahrain is in the 50 position in the ranking around the world and the 8 position in the middle east with a rate of 23.62 people died for each 100 thousands. Iraq is the first in Middle east with a rate of 44.75, Saudi Arabia is the 10 position in ME with a rate of 23.25 (6).

Motor vehicle crashes are the leading cause of death for the age group 2 to 14 years old (based on 2004 figures, which are the latest mortality data currently available from the National Center for Health Statistics). Every day in the United States, an average of 5 children age 14 and younger were killed and 568 were injured in motor vehicle crashes during 2006. Research has shown that lap/shoulder seat belts, when used, reduce the risk of fatal injury to front seat occupants (age 5 and older) of passenger cars by 45 percent and the risk of moderate-to-critical injury by 50 percent.

During 2006, 6,983 passenger vehicle occupants age 14 and younger were involved in fatal crashes. For those children where restraint was known, 25 percent were unrestrained; among those who were fatally injured, 45 percent were unrestrained. Research on the effectiveness of child safety seats has found them to reduce fatal injury by 71 percent for infants (less than 1 year old) and by 54 percent for toddlers (1-4 years old) in passenger cars. Booster seats are designed to raise children up so that the safety belt fits correctly to the shoulder belt should cross the child's chest and rest snugly on the shoulder, and the lap belt should rest low across the pelvis or hip area. Among children under age 5, an estimated 425 lives were saved in 2006 by child restraint use (7). Around 77% of RTAs deaths were due to alcohol abuse, and 77% of adolescents 14-19 years old are not using seatbelt (4). Speeding is the most frequent cause of accidents (43%) of total number accidents (1985-1988) (1).

In crashes, small children are liable to become flying missiles. The best way to protect them from the impact of a crash is to put them in a suitable restraint. This will stop them being thrown around the car. If you are the driver, it is your responsibility to ensure any front seat and front middle seat passenger of or under the age of 2 years is securely fastened to his seat by means of an approved restraint for children which is different from the ordinary seat belt. Any front seat passenger over 2 years of age but under 15 years old must wear a seat belt which can effectively restrain him (8).

RTAs are the leading cause of child death as shown by a study conducted in Australia, and it costs around 22\$ million per year. Booster seats increase crash protection, reducing injury by 70% compared with unrestrained children. The study indicated that 47% restrict their alcohol drinking, 40% do not drink while driving, and 13% do not drink at any time (7).

## **Research methodology**

### **Study Aim:**

To investigate attitudes, knowledge and behavior of parents regarding safety child occupant travel in Bahrain.

### **Study Objectives:**

- To investigate parents' attitude, knowledge and behavior relating to their role in protecting their children during vehicle occupant travel.
- To assess the level of parents attitude, knowledge and behavior towards motor vehicle restraint use for children.
- To evaluate the risk factors hindering safety child occupant travel.

### **Hypothesis:**

Hypothesis based on: Do parents in Bahrain have a general sound of attitude, knowledge and behavior regarding safety child occupant? , or they do not take a necessary precautions to risk factors hindering safety child occupant ? .

### **Study Design & Method:**

A cross-sectional study was chosen, because of times constrains and low cost. Data were collected over a two months period; September and October 2013 at The City Center Mall in Bahrain. The study instrument was a structured face to face administered questionnaire, consisting of 17 questions. The questionnaire was adopted from a previous study and modified (7).

The questionnaire consists of 2 parts: The first part contains information on parents' demographic characteristics which include: age, gender, nationality, marital status, level of education and number and age of children. The second part of the questionnaire collects data about driving information of parents, behavior of parents while driving ,and child restrains used by parents for their children.

### **Study population:**

The target population of our research was parents in Bahrain.

### **Sample size determination:**

To our information, there is no data revealing attitudes, knowledge and behavior of parents regarding safety child occupant in Bahrain. A convenient sample of 200 subjects was taken because of limitation of time, and low response rate.

Data Collection Procedure:

The kind of approach was face to face interview based on the belief that the data from an interviewer – administered questionnaire could provide more reliable and complete information than a self – administered questionnaire, which often results in inappropriate compilation and misinterpretation of the items.

Pilot Study:

A pilot study was conducted to assess the time that is needed for the participants to answer the questionnaire and to find if there are any difficulties facing the residents in filling the questionnaire.

Data Entry and Analysis:

All data were coded, entered and analyzed using the statistical package of social sciences (SPSS 20) program. Numerical data (e.g. age ) were presented by mean and standard deviation. Categorical data were presented as frequency and percentage. Chi-squared test was used to assess the association between age, gender, nationality, level of education, number of children & the attitude & knowledge of parents regarding child occupant safety measures. P-value less than 0.05 was considered statistically significant.

Ethical considerations:

The study was approved by the research committee of the Arabian Gulf University. A verbal consent was obtained from each & all participants during the survey. All responses were kept private & confidential, as well as, anonymous.

## **Results**

In this study, there had been 200 responses, 187 of them were adequate to perform statistical analysis. The age of the participants ranged between 18 and 60 years old. Most of the parents participated were between 20 and 50 years old (76.5%). The study revealed that 51.9% of the participants were Bahraini while 49.1% were from other nationalities. The level of education of the research participants were mostly of University degree or higher (61%). The respondents were mainly male (70.6%) because most of the females refused to participate in the study. Most of the parents were currently married (72.7%), 16.6% of parents were single, & those who were divorced were 10.7%.

Some participants had no children (19.8%), 15.5% were having only one child, 21.9% were having 2 children, 16.6% were having 3 children and 26.2% were having 4 or more children. Almost half of the participants (51.3%) were having children below 7 years of age (Table 1).

The study also revealed that most of parents have been using car as a vehicle (80.7%) and only 4.3% of them did not have a vehicle (Table 2). According to number of crash over the previous 2 years, more than half of the parents stated that they have not been involved in any accident (56.1%), 34.2% have been involved in one or two accidents, and 9.6% have been involved in three or more accidents (Figure 1). Behavior of parents regarding seatbelt using while driving revealed that 37.4% were always concerned, 25.7% only sometimes, and 36.9% were rarely interested to use seatbelt (Figure 4).

However, attitude of parents regarding the discipline to drive at or below the speed limit showed that only 23.1% of them were always concerned about the speed limits while more than half of them (51.9%) were concerned

sometimes about the speed limits and 16% were not discipline to be at the speed limits (Figure 2). Also when parents were asked about driving distraction like eating, drinking, and talking on mobile phone, only 26.2% were never distracted while driving, while 54.5% were sometimes distracted and 19.3% mentioned that they have always been distracted while driving (Figure 3). On questioning alcohol drinking while driving, 96.3% of parents stated that they never drink, and only 3.7% had been drinking while driving (Table 3).

On asking about the type of restraint used by parents for their children, 27.8% of parents mentioned that they are using child restraints, 32.1% are using regular seatbelt, and 40.1% mentioned that they are not using any kind of restraints (Figure 5). The study showed that 64.7% of parents believed that children must travel in a specially fitted capsule, while 26.7% believed that there is no such need as they can protect their children by sitting behind them or at their arms, and 6.4% did not know what should be the appropriate way to handle their children in a car seat (Figure 6).

Many parents agreed that children under the age of 7 years should not sit in the front seat of a vehicle (69.5%), however, 24.1% of them did not agree and 6.4% did not know if children under the age of 7 years should not sit in the front seat if the vehicle (Figure 7).

However, when parents were asked about whether it is legal to children of any age to travel in the car if they are wearing a seatbelt, 44.4% answered that it is the safest way to keep children harmless from car accidents, while 31.6% did not agree, and 24.1% did not know (Table 4).

**Table 1.** Demographic characteristics of parents

		<i>Current sample (%)</i>
<i>Age Group</i>	<i>Less Than 20</i>	7.5
	<i>Between 20 and 50</i>	76.5
	<i>More Than 50</i>	16
<i>Gender</i>	<i>Male</i>	70.6
	<i>Female</i>	29.4
<i>Nationality</i>	<i>Bahraini</i>	51.9
	<i>Non-Bahraini</i>	49.1
<i>Level of education</i>	<i>Finished intermediate education</i>	10.2
	<i>Finished secondary education</i>	21.4
	<i>University degree or higher</i>	61
	<i>other</i>	7.5
<i>Marital status</i>	<i>Single</i>	16.6

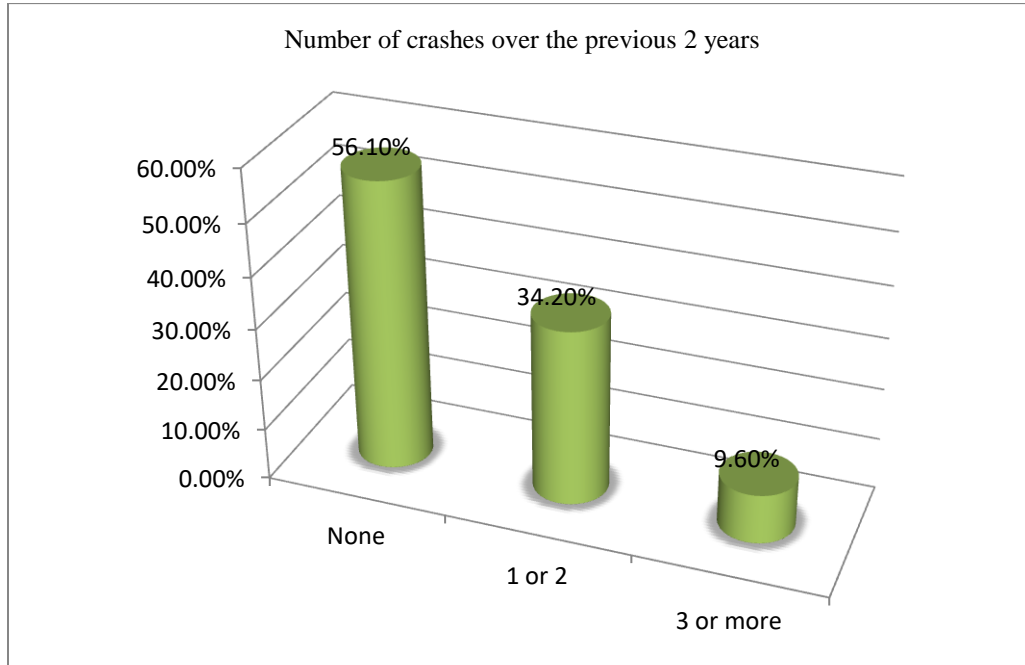
	<i>Married</i>	72.7
	<i>Divorced</i>	10.7
<i>Number of children</i>	<i>No Children</i>	19.8
	<i>1</i>	15.5
	<i>2</i>	21.9
	<i>3</i>	16.6
	<i>4 or more</i>	26.2
<i>Age of children</i>	<i>Below 7 years</i>	51.3
	<i>7 years or more</i>	48.7

***Driving information of parents***

**Table 2.** Vehicle type

		<i>Current sample(%)</i>
<i>Vehicle type</i>	<i>No Vehicle</i>	4.3
	<i>Car</i>	80.7
	<i>Station wagon</i>	2.1
	<i>Van</i>	10.7
	<i>Other</i>	2.1

**Figure 1.** Number of crash over the previous 2 years



***Behavior of parents while driving and use of child restraint***

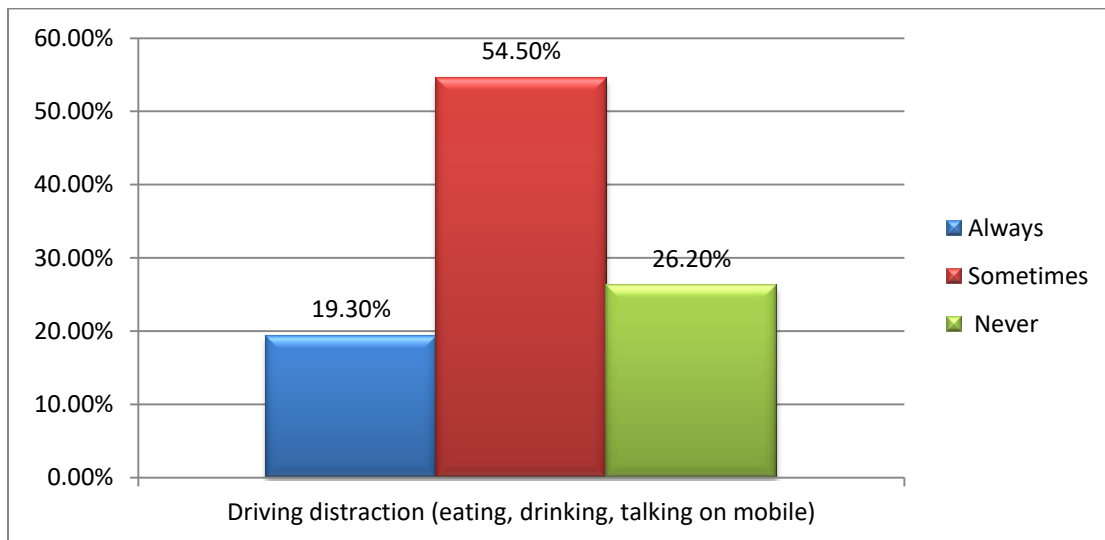
**Table 3.** Drinking alcohol while Driving

		<i>Current sample(%)</i>
<i>Drinking alcohol while Driving</i>	<i>Always</i>	<i>0</i>
	<i>Sometimes</i>	<i>3.7</i>
	<i>Never</i>	<i>96.3</i>

**Figure 2.** Driving at or below the speed limit



**Figure-3.** Driving distraction (eating, drinking, talking on mobile)



**Figure 4.** Using seatbelt



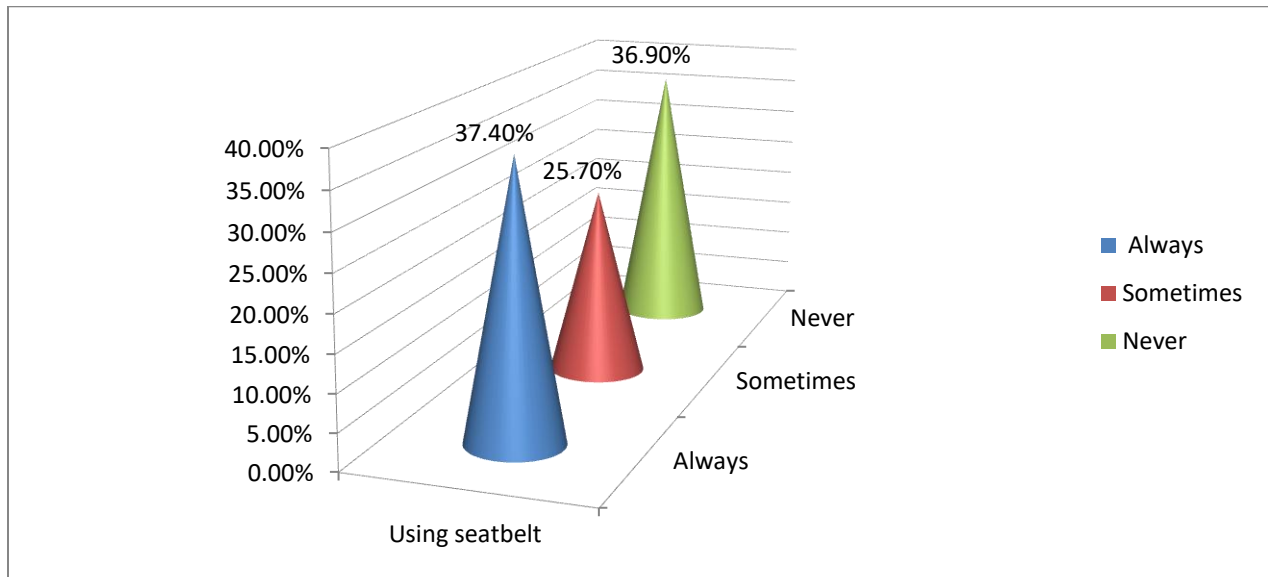
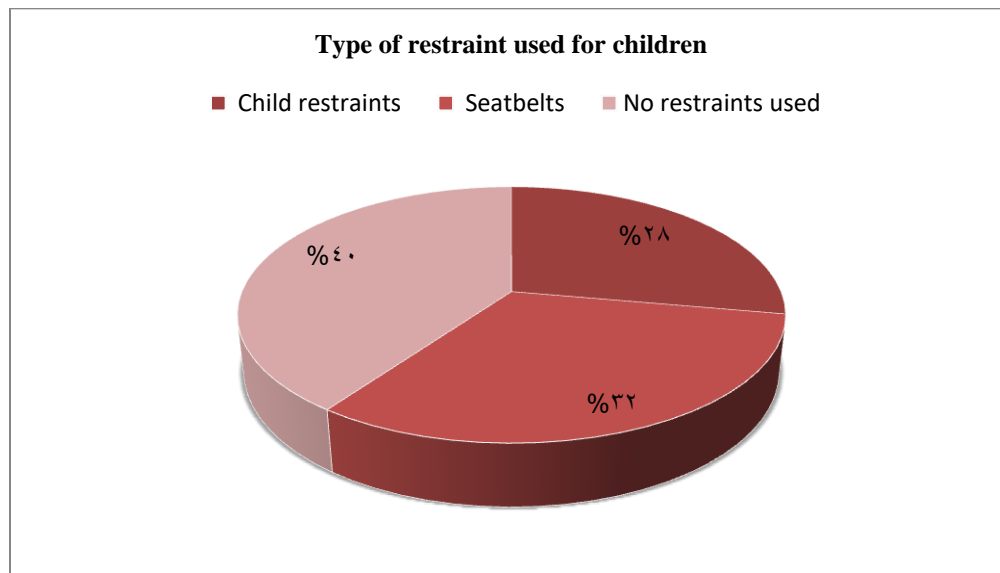


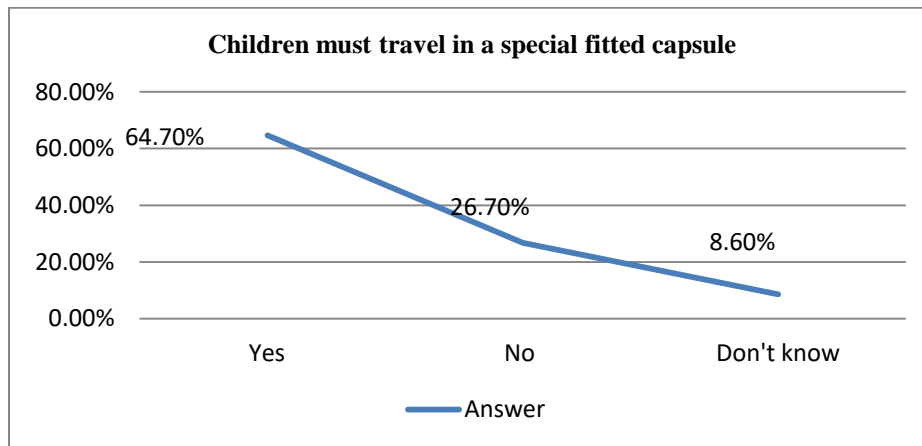
Figure 5. Type of restraint used for children



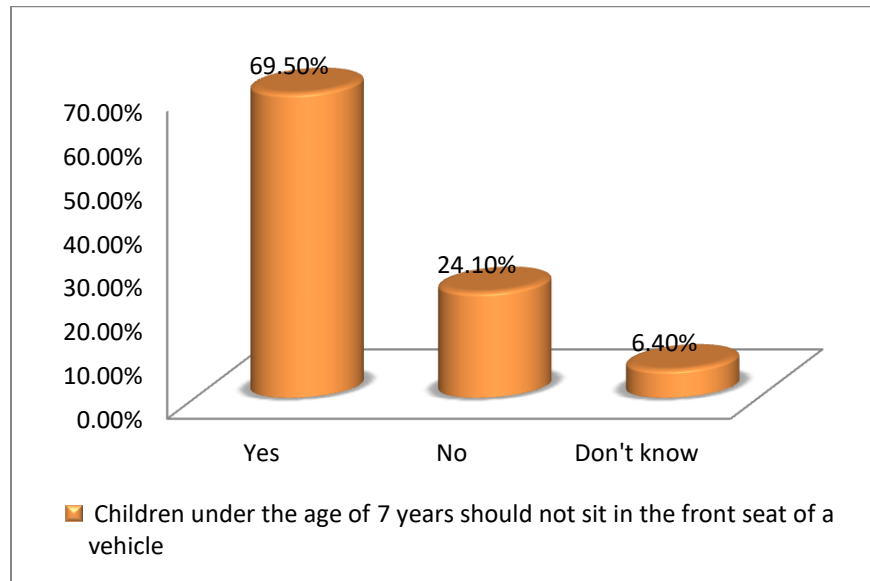
**Knowledge of parents regarding use of child restraint**

**Table 4.** Legally, children of any age can travel in the car if they are wearing a seatbelt

		Current sample (%)
<i>Legally, children of any age can travel in the car if they are wearing a seatbelt</i>	<i>Yes</i>	44.4
	<i>No</i>	31.6
	<i>Don't know</i>	24.1



**Figure 6.** Children must travel in a specially fitted capsule



**Figure 7.** Children under the age of 7 years should not sit in the front seat of a vehicle

**Bivariate analysis ( Tables – 5 to 29):**

Using Seat belt did not show any significant association with respondents' age(p-value =0.73), gender(p-value =0.41), nationality(p-value =0.40), level of education(p-value =0.06), or number of children(p-value =0.59). The results showed that there was no significant association between type of restraint used for Children and respondents' age(p-value =0.10), gender (p-value =0.12) and nationality(p-value =0.95). However, there was significant association with the level of education (p-value =0.02) and number of children (p<.001).

Age(p-value =0.09), gender(p-value =0.40), level of education (p-value =0.38)and nationality (p-value =0.85) did not reveal a significant association with the knowledge that Babies should travel in a special fitted capsule. Rather, there was a significant association with number of children (p =.04). Moreover, gender(p-value =0.14), number of children (p-value =0.69)and nationality (p-value =0.76) did not show a significant association with the knowledge that Children under 7 years of age should not sit in front seat ,but it showed a significant association with age (p=.001) and with the level of education (p=.01). Knowledge that Children of any age can travel in the car if they are wearing a seatbelt showed a significant association with age (p=.02) but not with gender (p=.70), level of education(p=.10), number of children(p=.90) and nationality(p=.96).

**Table 5.** Using seatbelt \* Age Group

Using seatbelt		Age group			Total
		Less than 20	between 20 & 50	More than 50	
Always	Count	5	53	12	70
	%	7.1%	75.7%	17.1%	100.0%
Sometimes	Count	3	35	10	48
	%	6.2%	72.9%	20.8%	100.0%
Never	Count	6	55	8	69
	%	8.7%	79.7%	11.6%	100.0%
Total	Count	14	143	30	187
	%	7.5%	76.5%	16.0%	100.0%

**Table 6.** Using seatbelt \* Gender

Using seatbelt		Gender		Total
		Male	Female	
Always	Count	46	24	70
	%	65.7%	34.3%	100.0%
Sometimes	Count	37	11	48
	%	77.1%	22.9%	100.0%
Never	Count	49	20	69
	%	71.0%	29.0%	100.0%
Total	Count	132	55	187
	%	70.6%	29.4%	100.0%

**Table 7.** Using seatbelt \* Nationality

Using seatbelt		Nationality		Total
		Bahraini	Non-Bahraini	
Always	Count	35	35	70
	%	50.0%	50.0%	100.0%
Sometimes	Count	22	26	48
	%	45.8%	54.2%	100.0%
Never	Count	40	29	69
	%	58.0%	42.0%	100.0%
Total	Count	97	90	187
	%	51.9%	48.1%	100.0%

**Table 8.** Using seatbelt \* Level of education

Using seatbelt		Level of education				Total
		Finish intermediate education	Finish secondary education	University degree or higher	Other	
Always	Count	6	12	49	3	70
	%	8.6%	17.1%	70.0%	4.3%	100.0%
Sometimes	Count	3	12	25	8	48
	%	6.2%	25.0%	52.1%	16.7%	100.0%
Never	Count	10	16	40	3	69
	%	14.5%	23.2%	58.0%	4.3%	100.0%
Total	Count	19	40	114	14	187
	%	10.2%	21.4%	61.0%	7.5%	100.0%

**Table 9.** Using seatbelt \* Number of children

Using seatbelt		Number of children					Total
		No Children	1	2	3	4 Or more	
Always	Count	13	11	19	14	13	70
	%	18.6%	15.7%	27.1%	20.0%	18.6%	100.0%
Sometimes	Count	11	9	9	5	14	48
	%	22.9%	18.8%	18.8%	10.4%	29.2%	100.0%
Never	Count	13	9	13	12	22	69
	%	18.8%	13.0%	18.8%	17.4%	31.9%	100.0%
Total	Count	37	29	41	31	49	187
	%	19.8%	15.5%	21.9%	16.6%	26.2%	100.0%

**Table 10.** Type of restraint children used \* Age group

Type of restraint children used		Age group			Total
		Less than 20	between 20 and 50	More than 50	
Child restraints	Count	0	46	6	52
	%	0.0%	88.5%	11.5%	100.0%
Seatbelts	Count	6	43	11	60
	%	10.0%	71.7%	18.3%	100.0%
No Restraint	Count	8	54	13	75
	%	10.7%	72.0%	17.3%	100.0%
Total	Count	14	143	30	187
	%	7.5%	76.5%	16.0%	100.0%

**Table 11.** Type of restraint children used \* Gender

Type of restraint children used		Gender		Total
		Male	Female	
<b>Child restraints</b>	<b>Count</b>	35	17	52
	<b>%</b>	67.3%	32.7%	100.0%
<b>Seatbelts</b>	<b>Count</b>	38	22	60
	<b>%</b>	63.3%	36.7%	100.0%
<b>No Restraint</b>	<b>Count</b>	59	16	75
	<b>%</b>	78.7%	21.3%	100.0%
<b>Total</b>	<b>Count</b>	132	55	187
	<b>%</b>	70.6%	29.4%	100.0%

**Table 12.** Type of restraint children used \* Nationality

Type of restraint children used		Nationality		Total
		Bahraini	Non-Bahraini	
<b>Child restraints</b>	<b>Count</b>	27	25	52
	<b>%</b>	51.9%	48.1%	100.0%
<b>Seatbelts</b>	<b>Count</b>	32	28	60
	<b>%</b>	53.3%	46.7%	100.0%
<b>No Restraint</b>	<b>Count</b>	38	37	75
	<b>%</b>	50.7%	49.3%	100.0%
<b>Total</b>	<b>Count</b>	97	90	187
	<b>%</b>	51.9%	48.1%	100.0%

**Table 13.** Type of restraint children used \* Level of education

Type of restraint children used		Level of education				Total
		Finish intermediate education	Finish secondary education	University degree or higher	Other	
Child restraints	Count	3	9	34	6	52
	%	5.8%	17.3%	65.4%	11.5%	100.0%
Seatbelts	Count	11	12	30	7	60
	%	18.3%	20.0%	50.0%	11.7%	100.0%
No Restraint	Count	5	19	50	1	75
	%	6.7%	25.3%	66.7%	1.3%	100.0%
Total	Count	19	40	114	14	187
	%	10.2%	21.4%	61.0%	7.5%	100.0%

**Table 14.** Type of restraint children used \* Number of children

Type of restraint children used		Number of children					Total
		No Children	1	2	3	4 Or more	
Child restraints	Count	3	14	14	8	13	52
	%	5.8%	26.9%	26.9%	15.4%	25.0%	100.0%
Seatbelts	Count	9	11	15	15	10	60
	%	15.0%	18.3%	25.0%	25.0%	16.7%	100.0%
No Restraint	Count	25	4	12	8	26	75
	%	33.3%	5.3%	16.0%	10.7%	34.7%	100.0%
Total	Count	37	29	41	31	49	187
	%	19.8%	15.5%	21.9%	16.6%	26.2%	100.0%



**Table 15.** Babies traveling in special fitted capsule \* Age group

Babies traveling in special fitted capsule		Age group			Total
		Less than 20	between 20 and 50	More than 50	
Yes	Count	9	99	13	121
	%	7.4%	81.8%	10.7%	100.0%
No	Count	3	34	13	50
	%	6.0%	68.0%	26.0%	100.0%
I don't know	Count	2	10	4	16
	%	12.5%	62.5%	25.0%	100.0%
Total	Count	14	143	30	187
	%	7.5%	76.5%	16.0%	100.0%

**Table 16.** Babies traveling in special fitted capsule \* Gender

Babies traveling in special fitted capsule		Gender		Total
		Male	Female	
Yes	Count	82	39	121
	%	67.8%	32.2%	100.0%
No	Count	39	11	50
	%	78.0%	22.0%	100.0%
I don't know	Count	11	5	16
	%	68.8%	31.2%	100.0%
Total	Count	132	55	187
	%	70.6%	29.4%	100.0%

**Table 17.** Babies traveling in special fitted capsule \* Nationality

Babies traveling in special fitted capsule		Nationality		Total
		Bahraini	Non-Bahraini	
Yes	Count	61	60	121
	%	50.4%	49.6%	100.0%
No	Count	27	23	50
	%	54.0%	46.0%	100.0%
I don't know	Count	9	7	16
	%	56.2%	43.8%	100.0%
Total	Count	97	90	187
	%	51.9%	48.1%	100.0%

**Table 18.** Babies traveling in special fitted capsule \* Level of education

Babies traveling in special fitted capsule		Level of education				Total
		Finish intermediate education	Finish secondary education	University degree or higher	Other	
Yes	Count	10	27	78	6	121
	%	8.3%	22.3%	64.5%	5.0%	100.0%
No	Count	7	10	28	5	50
	%	14.0%	20.0%	56.0%	10.0%	100.0%
I don't know	Count	2	3	8	3	16
	%	12.5%	18.8%	50.0%	18.8%	100.0%
Total	Count	19	40	114	14	187
	% within	10.2%	21.4%	61.0%	7.5%	100.0%

**Table 19.** Babies traveling in special fitted capsule \* Number of children

Babies traveling in special fitted capsule		Number of children					Total
		No Children	1	2	3	4 Or more	
Yes	Count	29	18	30	21	23	121
	%	24.0%	14.9%	24.8%	17.4%	19.0%	100.0%
No	Count	5	8	9	10	18	50
	%	10.0%	16.0%	18.0%	20.0%	36.0%	100.0%
I don't know	Count	3	3	2	0	8	16
	%	18.8%	18.8%	12.5%	0.0%	50.0%	100.0%
Total	Count	37	29	41	31	49	187
	%	19.8%	15.5%	21.9%	16.6%	26.2%	100.0%

**Table 20.** Child under 7Y notified in front seat \* Age group

Child under 7Y notified in front seat		Age group			Total
		Less than 20	between 20 and 50	More than 50	
Yes	Count	9	107	14	130
	%	6.9%	82.3%	10.8%	100.0%
No	Count	2	32	11	45
	%	4.4%	71.1%	24.4%	100.0%
I don't know	Count	3	4	5	12
	%	25.0%	33.3%	41.7%	100.0%
Total	Count	14	143	30	187
	%	7.5%	76.5%	16.0%	100.0%

**Table 21.** Child under 7Y notified in front seat \* Gender

Child under 7Y notified in front seat		Gender		Total
		Male	Female	
Yes	Count	87	43	130
	%	66.9%	33.1%	100.0%
No	Count	37	8	45
	%	82.2%	17.8%	100.0%
I don't know	Count	8	4	12
	%	66.7%	33.3%	100.0%
Total	Count	132	55	187
	%	70.6%	29.4%	100.0%

**Table 22.** Child under 7Y notified in front seat \* Nationality

Child under 7Y notified in front seat		Nationality		Total
		Bahraini	Non-Bahraini	
Yes	Count	68	62	130
	%	52.3%	47.7%	100.0%
No	Count	24	21	45
	%	53.3%	46.7%	100.0%
I don't know	Count	5	7	12
	%	41.7%	58.3%	100.0%
Total	Count	97	90	187
	%	51.9%	48.1%	100.0%

**Table 23.** Child under 7Y notified in front seat \* Level of education

Child under 7Y notified in front seat		Level of education				Total
		Finish intermediate education	Finish secondary education	University degree or higher	Other	
Yes	Count	15	25	84	6	130
	%	11.5%	19.2%	64.6%	4.6%	100.0%
No	Count	2	10	28	5	45
	%	4.4%	22.2%	62.2%	11.1%	100.0%
I don't know	Count	2	5	2	3	12
	%	16.7%	41.7%	16.7%	25.0%	100.0%
Total	Count	19	40	114	14	187
	%	10.2%	21.4%	61.0%	7.5%	100.0%

**Table 24.** Child under 7Y notified in front seat \* Number of children

Child under 7Y notified in front seat		Number of children					Total
		No Children	1	2	3	4 Or more	
Yes	Count	28	22	26	22	32	130
	%	21.5%	16.9%	20.0%	16.9%	24.6%	100.0%
No	Count	6	5	14	7	13	45
	%	13.3%	11.1%	31.1%	15.6%	28.9%	100.0%
I don't know	Count	3	2	1	2	4	12
	%	25.0%	16.7%	8.3%	16.7%	33.3%	100.0%
Total	Count	37	29	41	31	49	187
	%	19.8%	15.5%	21.9%	16.6%	26.2%	100.0%

**Table 25.** Child of any age traveling in car with seatbelt \* Age group

Child of any age traveling in car with seatbelt		Age group			Total
		Less than 20	between 20 and 50	More than 50	
Yes	Count	4	66	13	83
	%	4.8%	79.5%	15.7%	100.0%
No	Count	2	49	8	59
	%	3.4%	83.1%	13.6%	100.0%
I don't know	Count	8	28	9	45
	%	17.8%	62.2%	20.0%	100.0%
Total	Count	14	143	30	187
	%	7.5%	76.5%	16.0%	100.0%

**Table 26.** Child of any age traveling in car with seatbelt \* Gender

Child of any age traveling in car with seatbelt		Gender		Total
		Male	Female	
Yes	Count	61	22	83
	%	73.5%	26.5%	100.0%
No	Count	41	18	59
	%	69.5%	30.5%	100.0%
I don't know	Count	30	15	45
	%	66.7%	33.3%	100.0%
Total	Count	132	55	187
	%	70.6%	29.4%	100.0%

**Table 27.** Child of any age traveling in car with seatbelt \* Nationality

Child of any age traveling in car with seatbelt		Nationality		Total
		Bahrai ni	Non-Bahrai ni	
Yes	Count	43	40	83
	%	51.8%	48.2%	100.0%
No	Count	30	29	59
	%	50.8%	49.2%	100.0%
I don't know	Count	24	21	45
	%	53.3%	46.7%	100.0%
Total	Count	97	90	187
	%	51.9%	48.1%	100.0%

**Table 28.** Child of any age traveling in car with seatbelt \* Level of education

Child of any age traveling in car with seatbelt		Level of education				Total
		Finish intermediate education	Finish secondary education	University degree or higher	Other	
Yes	Count	7	15	54	7	83
	%	8.4%	18.1%	65.1%	8.4%	100.0%
No	Count	7	11	40	1	59
	%	11.9%	18.6%	67.8%	1.7%	100.0%
I don't know	Count	5	14	20	6	45
	%	11.1%	31.1%	44.4%	13.3%	100.0%
Total	Count	19	40	114	14	187
	%	10.2%	21.4%	61.0%	7.5%	100.0%

**Table 29.** Child of any age traveling in car with seatbelt \* Number of children

Child of any age traveling in car with seatbelt		Number of children					Total
		No Childr en	1	2	3	4 Or more	
Yes	Count	16	12	19	13	23	83
	%	19.3%	14.5%	22.9%	15.7%	27.7%	100.0%
No	Count	9	10	15	11	14	59
	%	15.3%	16.9%	25.4%	18.6%	23.7%	100.0%
I don't know	Count	12	7	7	7	12	45
	%	26.7%	15.6%	15.6%	15.6%	26.7%	100.0%
Total	Count	37	29	41	31	49	187
	%	19.8%	15.5%	21.9%	16.6%	26.2%	100.0%

## DISCUSSION

This study aimed to gain a clear understanding regarding attitudes, knowledge, and behavior relating to safe child occupant travel, and road safety in general of a sample of parents in Bahrain. The majority of participants in the current study were male and relatively well-educated. Participants in the current study were more likely to be male and married (Table 1).

A previously conducted study showed that when participants asked about their driving history, 14% of participants indicated that they had been involved in a motor vehicle crash within the previous 2 years. While the majority of participants were involved in one crash (79%), a small proportion reported being involved in two or three crashes, by 17% and 4%, respectively (7). Whereas this research showed higher percentage (43.8%) of the participants had been involved in a motor vehicle crash within the previous 2 years (Figure 1).

In terms of restraint use in a previous study, 98% of participants reported that they “always” wore a seatbelt while travelling in a vehicle, with the remaining 2% reported that they wore a seatbelt “often” (7). Whereas this research showed only 37% of the participants who stated that they “always” wore a seatbelt while travelling in a vehicle, with the remaining reporting that they wore a seatbelt “sometimes” & “never”, by 25.7% & 36.9% respectively (Figure 4).

In the same previous study, most participants indicated that they “drive at or below the speed limit” (85%) (7). Whereas this research showed only 32.1% of the participants whom “always” drive at or below the speed limit,



while 51% whom “sometimes” will be restricted to speed limits and 16% “never” restricted to speed limits (Figure 2). This is an important issue to be concerned with since the previous global studies revealed that speeding is the most frequent cause of accidents by 43% of total number accidents (1). Most participants indicated that in a previous study that they restricted what they drink when driving by 47% or who don’t drink when driving by 53% (7). Whereas this research showed 3.7% whom restrict what they drink when driving and 96% who don’t drink when driving or at any time (Table 3).

The previous global studies revealed that around 77% of RTAs deaths were due to alcohol abuse (1). The low percentage of alcohol use may reflect the nature of the sample and the culture of the community from which it is derived. When participants asked in a similar study about their behavior while driving, more than half of the participants reported engaging in distracting behaviors “often” or “sometimes” by 54% (7). However, this research showed higher figure since 73.8% of the participants would “always” or “sometimes” be distracted by eating, drinking, or talking on mobile while driving (Figure 3).

In a previously conducted study 80% of parents correctly stated that children should be aged over 7 years before travelling in the front seat of the vehicle (7). Whereas this research showed lower number of parents (69.5%) agreed to that children under the age of 7 years should not sit in the front seat of a vehicle (Figure 7).

Most participants in a previous study correctly reported that children under the age of 7 must travel in a specially fitted capsule by 97% (7). Whereas this research showed that only 64.7% of parents believed that children must travel in a specially fitted capsule, while 26.7% believed that there is no such need as they can protect their children by sitting behind them or at their arms, and 6.4% did not know what should be the appropriate way to handle their children in a car seat (Figure 6).

Another important finding in this study is that 64.7% of parents believed that children must travel in a specially fitted capsule but only 27.8% are using a proper child restraints type (Figure 5). This means that despite parents’ knowledge about safety rules, their behavior regarding safety child occupant should be reinforced. In this study, 31.6% of participants did not believe that “legally, children of any age can travel in the car if they are wearing a seatbelt” and 24% did not know if this is true or not (Table 4). Whereas a previous study showed that 52% of participants correctly stated that it is true (7).

Many previous researches on the effectiveness of child safety seats have found them to reduce fatal injury by 71 percent for infants (less than 1 year old) & by 54 percent for toddlers (1-4 years old) in passenger cars. Booster seats are designed to raise children up so that the safety belt fits correctly the shoulder belt and should cross the child’s chest and rest snugly on the shoulder, and the lap belt should rest low across the pelvis or hip area. Global among children under age 5, an estimated 425 lives were saved in 2006 by child restraint use (7).

### ***Conclusion & Recommendations:***

In conclusion the findings of this study revealed that attitudes, knowledge and behaviors regarding general road safety were fairly acceptable. However, parents attitudes and knowledge regarding safe child occupant travel were not adequate as measures for safe child occupant travel and the use of a specially fitted capsule for children were not frequently implemented. These findings suggest that it is important to educate parents about the importance of child restraint and child safety principles during travel. Our recommendations are these findings

should be taken seriously for those who are responsible in the government, health care and media to reach an acceptable degree of awareness and knowledge.

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