

# Parent's knowledge, attitude, and practice about children car seats at Unaizah city, KSA

Ghadah A. AlSallum<sup>1</sup>, Alshamoos A. Alwassel<sup>1</sup>,  
Abdullah M. Alshushan<sup>1</sup>, Abdulrahman K. Abaalkhail<sup>1</sup>,  
Mohammad A. Alhasoon<sup>2</sup>, Abdullah S. Aldamigh<sup>2</sup>

<sup>1</sup>Unaizah College of Medicine, Qassim University, <sup>2</sup>Department of Pediatrics, Unaizah College of Medicine, Unaizah, Qassim, Saudi Arabia

## ABSTRACT

**Background:** Motor vehicle collision (MVC) is a major cause of death in children worldwide. Using children car seats will stabilize them during accidents and decrease the morbidity and mortality from MVC dramatically. There is no study in Saudi Arabia about car seat use and relationship between using it and children morbidity and mortality following a car accident. **Objectives:** To assess knowledge, attitude, and practice of children car seats among parents at Unaizah city, KSA, to assess the level of awareness regarding the children car safety system, to determine the parent level of education, socioeconomic status, and other factors affecting their behavior regarding car seats, to determine the prevalence of car seat use among parents in Unaizah city, and to assess the effectiveness of car seat policies on parents' behavior. **Design:** Cross-sectional study. **Settings:** Public and private pediatric clinics at Unaizah city in Qassim region. **Materials and Methods:** The study was conducted from May to June 2018, among parents with child  $\leq 7$  years old. Anyone who could not complete the questionnaire for any reason was excluded from our study. SPSS version 20 has been used to analyze all data. **Main Outcome Measures:** To assess knowledge, attitude, and practice of children car seats among parents at Unaizah city, KSA. **Sample Size:** 350. **Results:** There were 350 participants who were included in this study of which females were dominant 77.1%. The age range of parents was 25–35 years old. Most of them complied with the seatbelt policy (56.7%). Among these numbers, 130 participants use a seatbelt for security reason while others were to protect from irregularities. More parents do not put baby seat in the car (57.3%) while 57 participants use child seat every time the child rides in the car. **Conclusion:** The overall knowledge, attitude, and practices toward children car safety seat in this study was relatively low. This signifies the need of parents to step up their awareness to safe guard their children while on the road. **Limitations:** Small sample size and limited to pediatrics clinics visitors.

**Keywords:** Accident, attitude, car seats, children, knowledge, parents, practices

## Introduction

Motor vehicle collision (MVC) is a major cause of death among children worldwide. The position of the child during an accident is one of the major factors that affect the outcome of the MVC. Using children car seats will stabilize them during accidents and

decrease the morbidity and mortality dramatically. The statistics of the Ministry of Health confirm that fifth of those who killed from traffic accidents are children under the age of 15. Moreover, 10% of child deaths in Saudi Arabia are due to traffic accidents. There is no study in Saudi Arabia about car-seat use and relationship between using it and children morbidity and mortality following a car accident. One of the key elements of children death and chronic disabilities resolution is to ensure proper education of caregiver about the importance of car seats.

**Address for correspondence:** Dr. Ghadah A. AlSallum, Unaizah College of Medicine, Qassim University, Unaizah, Qassim, Saudi Arabia. E-mail: Ghadah.alsallum@gmail.com

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According WHO the RTA associated with more than 40,000 injuries and deaths and at least 10% of them was children, and it proved that rare seat and restraint use will reduce the severity of the injury. Among child passengers of 0–8 years, 98% of them were unstrained and 20% of them were in front seat.

## Materials and Methods

### Study design and the sample

This cross-sectional descriptive study was conducted over a period of from May 1, 2018 to June 1, 2018, at pediatric clinics at King Saud Hospital, Al Wafa Hospital and Al Maali clinics, Alssalam clinics at Unaizah City, Saudi Arabia. Permission from the chosen hospitals was obtained after explaining the research problem and the aim of the study. The participants were informed about the purpose of the research; verbal consent was obtained before completing the questionnaire. Ethical considerations were also taken to ensure the confidentiality and privacy of the collected data. A total of 350 samples were selected by convenience with inclusion criteria of parents with child  $\leq 7$  years old. Anyone who could not complete the questionnaire for any reason was excluded from our study. Data collected by interview using a 15-question survey include the following:

Demographic data (gender, age, marital status, relation to the child), factors that affect caregiver's behavior (socioeconomic status, car type, educational level), family history (number of marriages, spouse educational level, do the family have a driver, how many children do the family have and the age difference between them), health status of the child, awareness of the car restrain system (do they use car seat, do they believe in car seats importance, do they use seatbelt for themselves or their child), and effect of law in their behavior.

### Statistical analyses

Statistical Packages for Social Sciences (SPSS) version 20 has been used to analyze all data in this project. Both descriptive and inferential statistics had been performed where numbers and percentages were used to present all categorical variables. A *P* value cutoff point of 0.05 at 95% CI was used to determine statistical significance. The analyses measure the relationship between sociodemographic factors and knowledge, attitude, and practices of parents toward children car seat by using chi square test.

The evaluation of attitude of parents toward children car seat comprised four questions; the most appropriate answer has been coded as 1 and the incorrect answer has been coded as 0, and the total score had been calculated by adding four questions. The minimum score was 0 and the maximum was 4, scores of 0–1 were classified as negative attitude while scores 2–4 were classified as positive attitude.

The assessment of practices of parents toward children car seat comprised four questions; the most appropriate answer has been

coded as 1 and the incorrect answer has been coded as 0, and the total score had been calculated by adding four questions. The minimum score was 0 and the maximum was 4; scores of 0–1 were classified as poor practices while scores 2–4 were classified as good practices.

The measurement of knowledge of parents toward children car seat comprised a single question as “Place of the child while driving” and “in the back seat” was the correct answer and it has been coded as 1, and the other options had been coded as 0. The correct answer has been classified as good knowledge, and the incorrect answer has been classified as poor knowledge.

## Results

There were 350 participants who were voluntarily enrolled in this study, where females were dominant as 270 (77.1%) compared to males as 80 (22.9%) [Table 1]. Most of them were in the age group 25–30 years old (35.4%), 27.4% were in the age group of 31–35 years old, 24.9% were in the age group of more than 35 years old, and 12.3% were in the age group of less than 25 years old. Almost 90% of participants were married with only 36 of them were unmarried. A large number of participants were mothers (68.0%), while 20.9% were fathers and 11.1% were other family members [Figure 1]. Nearly all participants were having children (90.3%) with only 34 were in the opposite. More than 50% of them were having 2–4 children, 25.7% were having one child, 10% were having 5 or more children, and 9.7% were bearing no child. In regards to the child interval, 40.6% of them were in the group of 1–2 years child interval, 33.1% were in the group of 3 years or more child interval, and 26.3% were having one child or no child. Three-fourth of them were having university or higher degree, while the other part were having diploma or below degree. Many participants were employed (65.7%), and on the other hand 34.3% were unemployed. Slightly more participants were having small car (52.0%), while 48.0% were having family car [Figure 2] with almost all of them bearing driving license (97.7%).

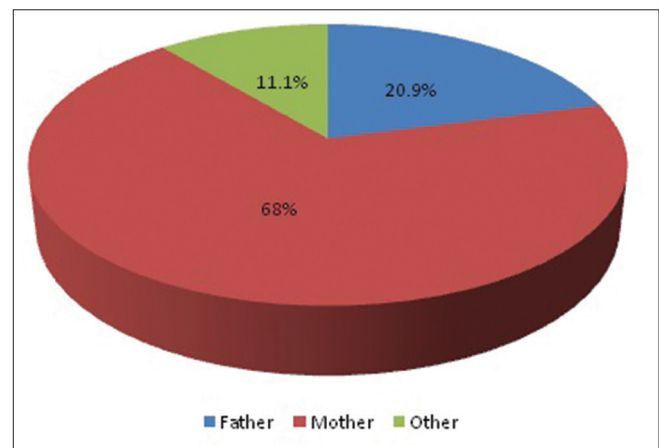


Figure 1: Distribution of relationship to child

**Table 1: Sociodemographic variables**

Study Variables	Missing cases N (%)	N (%) (n=350)
Gender	0 (0)	
Male		80 (22.9%)
Female		270 (77.1%)
Age group in years	0 (0)	
<25 years old		43 (12.3%)
25-30 years old		124 (35.4%)
31-35 years old		96 (27.4%)
>35 years old		87 (24.9%)
Marital Status	0 (0)	
Unmarried		36 (10.3%)
Married		314 (89.7%)
Relationship to child	0 (0)	
Father		73 (20.9%)
Mother		238 (68.0%)
Other family members		39 (11.1%)
Do you have children?	0 (0)	
Yes		316 (90.3%)
No		34 (9.7%)
Number of children	0 (0)	
None		34 (9.7%)
One child		90 (25.7%)
2-4 children		191 (54.6%)
5 or more		35 (10.0%)
For more than one child, average of years child interval	0 (0)	
One child/no child		92 (26.3%)
1-2 years		142 (40.6%)
≥3 years		116 (33.1%)
Educational level	0 (0)	
Diploma or below		89 (25.4%)
University or higher		261 (74.6%)
Occupation	0 (0)	
Unemployed		120 (34.3%)
Employed		230 (65.7%)
Type of car	0 (0)	
Small		182 (52.0%)
Family		168 (48.0%)
Do you have a driving license?	0 (0)	
Yes		342 (97.7%)
No		0 (2.3%)

\* Missing cases were excluded from the analysis.

Knowledge, attitude, and practices of parents toward children car seat is presented in Table 2, where most of them (194 participants) complied with the seatbelt policy (56.7%). Among these participants, 130 participants use seatbelt for security reason while others were to protect from irregularities. Not all participants answered the question regarding not use a child seat where 44 parents indicated “child refused” was the reason, followed by “I do not see it is important” for 43 participants, next “fear of the child sitting in the seat” for 25 participants and with other mixed reason for 62 participants. In view whether children’s seat has irregularities, 182 participants were viewed “children’s seat will be used”

**Table 2: Knowledge, attitude, and practices of parents toward children car seat**

Characteristics	Missing cases * N (%)	N (%) (n=350)
Attitude		
Do you use a seatbelt	08 (02.3%)	
Yes		194 (56.7%)
No		68 (19.9%)
Sometimes		80 (23.4%)
Do you use the seatbelt for?	204 (58.3%)	
Security		130 (89.0%)
To protect from irregularities		10 (06.8%)
Others		06 (04.1%)
Why not use a child seat?	157 (44.9%)	
Fear of the child sitting in the seat		25 (13.0%)
I do not see it is important		43 (22.3%)
The child refused		44 (22.8%)
The child is too young		19 (09.8%)
Others		62 (32.1%)
Do you think there were irregularities?	154 (44.0%)	
Children’s seat will be used		182 (92.9%)
It will not be used despite irregularities		06 (03.1%)
Others		08 (04.1%)
Practices		
Do you put the baby seat in the car?	08 (02.3%)	
Yes		146 (42.7%)
No		196 (57.3%)
How often do you use a child seat?	204 (58.3%)	
Sometimes		34 (23.3%)
Frequently		55 (23.3%)
Every time the child rides the car		57 (39.0%)
Do you use it for all your children under the age of eight?	204 (58.3%)	
Yes		117 (80.1%)
No		29 (19.9%)
Is child used seatbelt in the car?	155 (44.3%)	
Never used		138 (70.8%)
Sometimes used		39 (20.0%)
Seatbelt is used but wrongly		02 (01.0%)
Seatbelt is used		16 (08.2%)
Knowledge		
Place of the child while driving	156 (44.6%)	
In the front seat		69 (35.6%)
In the back seat		125 (64.4%)

as irregularities while 6 participants said, “it will not be used despite.” More parents do not put baby seat in the car (57.3%) while 57 participants use child seat every time the child rides in the car while other used child seat sometimes (34 participants) and more frequently (55 participants) while 117 parents used child seat for children under the age of 8 years old. Only 16 participants indicated adherence to use seatbelt for a child. Moreover, 125 participants observed to place the child in the back seat while driving and on the other hand 69 of them put the child in the front seat.

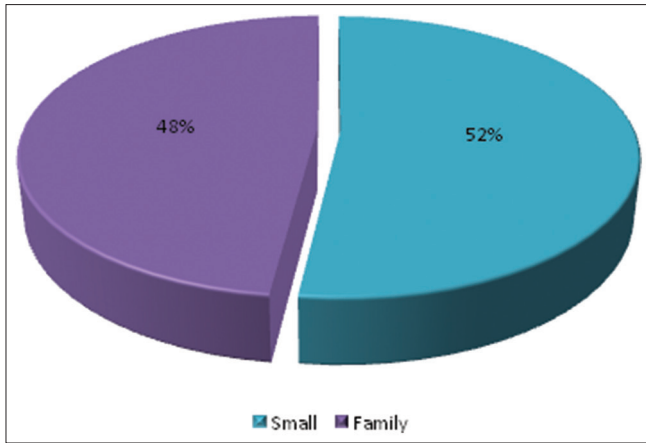


Figure 2: Distribution of type of car

\* Missing cases were excluded from the analysis.

In total, 107 participants (31.3%) were involved in a traffic accident [Table 3]. Among the 107 participants, 52 cases indicated that they had been hurt. Among those hurt, 22 cases were having minor injury, and 19 cases were severe and with 11 cases of mortality rate. In 43 cases, where children were involved in a traffic accident, only 6 cases used safety seat for child. Among them, 11 of the children got injured where 7 had minor and 3 had severe injury and one case was unknown.

The prevalence of knowledge, attitude, and practices of parents toward children car seat has been elaborated in Table 4. Based on the results, 225 (64.3%) were having poor knowledge while 125 (35.7%) were having good knowledge; attitude result shows that 163 (46.6%) of the participants were having negative attitude and 187 (53.4%) were having positive attitude; the results related to practices revealed that 224 (64.0%) of them were having poor practices and on the other hand 126 (36.0%) of them were having good practices [Figure 3].

KAP—knowledge, attitude, and practices. *P* value has been calculated using chi square test. \*\*Significant at  $P \leq 0.05$  level.

We used chi square test in Table 5 to measure the relationship of knowledge, attitude, and practices of parents toward children car seat versus sociodemographic characteristics with *P* values, which indicates whether the relationship is statistically significant where  $P \leq 0.05$  has been used as a significant level for all statistical tests. Gender shows significant relationship against attitude ( $P < 0.001$ ) while in knowledge and practices it shows negative relationship. Age group in years revealed significant difference on both knowledge ( $P 0.005$ ) and attitude ( $P 0.028$ ) while practices have no difference. Marital status has no significant association with the knowledge, attitude, and practices while relationship to child revealed statistically significant at knowledge ( $P 0.002$ ) and attitude ( $P < 0.001$ ) but not statistically significant at practices ( $P 0.302$ ). Having children also shows statistically significant for both knowledge ( $P 0.027$ ) and attitude ( $P < 0.001$ ) but not statistically significant at

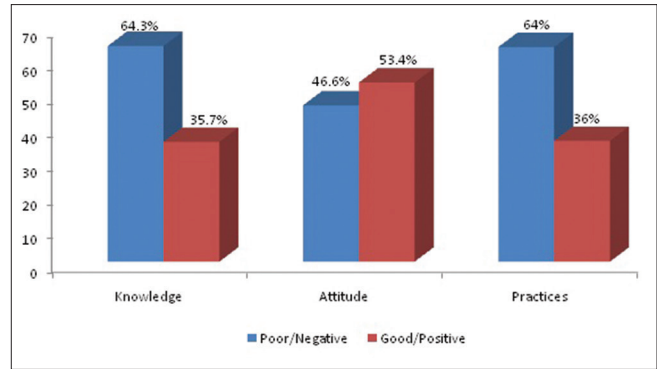


Figure 3: Distribution of knowledge, attitude, and practices of parents toward children car seat

Table 3: Accident and injury related characteristics

Characteristics	Missing cases * N (%)	N (%) (n=350)
Has a family member been involved in a traffic accident?	08 (02.3%)	
Yes		107 (31.3%)
No		235 (68.7%)
Has anyone been hurt?	243 (69.4%)	
Yes		52 (48.6%)
No		55 (51.4%)
What is the severity of the injury?	298 (85.1%)	
Minor		22 (42.3%)
Severe		19 (36.5%)
Death		11 (21.2%)
Was there a child in one incident?	244 (69.7%)	
Yes		43 (40.6%)
No		63 (59.4%)
Was the child using the safety seat?	308 (88.0%)	
Yes		06 (14.3%)
No		36 (85.7%)
Is the child injured?	307 (87.7%)	
Yes		11 (25.6%)
No		32 (74.4%)
What is the severity of the child's injury?	340 (97.1%)	
Minor		07 (70.0%)
Severe		03 (30.0%)

Table 4: Prevalence of knowledge, attitude and practices of parents toward children car seat

Characteristics	N (%) (n=350)
Knowledge	
Poor	225 (64.3%)
Good	125 (35.7%)
Attitude	
Negative	163 (46.6%)
Positive	187 (53.4%)
Practices	
Poor	224 (64.0%)
Good	126 (36.0%)

**Table 5: Relationship between KAP of parents toward children car seat versus sociodemographic data (n=350)**

Factor	Knowledge		Attitude		Practices	
	Poor N (%) (n=225)	Good N (%) (n=125)	Negative N (%) (n=163)	Positive N (%) (n=187)	Poor N (%) (n=224)	Good N (%) (n=126)
Gender						
Male	49 (21.8%)	31 (24.8%)	23 (14.1%)	57 (30.5%)	55 (24.6%)	25 (19.8%)
Female	176 (78.2%)	94 (75.2%)	140 (85.9%)	130 (69.5%)	169 (75.4%)	101 (80.2%)
P-value	0.519		<0.001 **		0.314	
Age group in years						
≤30 years old	120 (53.3%)	47 (37.6%)	88 (54.0%)	79 (42.2%)	105 (46.9%)	62 (49.2%)
>30 years old	105 (46.7%)	78 (62.4%)	75 (46.0%)	108 (57.8%)	119 (53.1%)	64 (50.8%)
P-value	0.005 **		0.028 **		0.675	
Marital Status						
Unmarried	20 (8.9%)	16 (12.8%)	21 (12.9%)	15 (8.0%)	25 (11.2%)	11 (8.7%)
Married	205 (91.1%)	109 (87.2%)	142 (87.1%)	172 (92.0%)	199 (88.8%)	115 (91.3%)
P-value	0.248		0.135		0.472	
Relationship to child						
Father	44 (19.6%)	29 (23.2%)	20 (12.3%)	53 (28.3%)	50 (22.3%)	23 (18.3%)
Mother	165 (73.3%)	73 (58.4%)	116 (71.2%)	122 (65.2%)	146 (65.2%)	92 (73.0%)
Other	16 (07.1%)	23 (18.4%)	27 (16.6%)	12 (06.4%)	28 (12.5%)	11 (08.7%)
P-value	0.002 **		<0.001 **		0.302	
Do you have children?						
Yes	209 (92.9%)	107 (85.6%)	141 (86.5%)	175 (93.6%)	201 (89.7%)	115 (91.3%)
No	16 (07.1%)	18 (14.4%)	22 (13.5%)	12 (06.4%)	23 (10.3%)	11 (08.7%)
P-value	0.027 **		0.026 **		0.641	
Number of children						
1 or No child	93 (41.3%)	31 (24.8%)	71 (43.6%)	53 (28.3%)	72 (32.1%)	52 (41.3%)
2-4 children	113 (50.2%)	78 (62.4%)	80 (49.1%)	111 (59.4%)	129 (57.6%)	62 (49.2%)
5 or more	19 (08.4%)	16 (12.8%)	12 (07.4%)	23 (12.3%)	23 (10.3%)	12 (09.5%)
P-value	0.007 **		0.009 **		0.225	
Child Interval						
One child/no child	77 (34.2%)	15 (12.0%)	58 (35.6%)	34 (18.2%)	54 (24.1%)	38 (30.2%)
1-2 years	89 (39.6%)	53 (42.4%)	34 (20.9%)	108 (57.8%)	86 (38.4%)	56 (44.4%)
≥3 years	59 (26.2%)	57 (45.6%)	71 (43.6%)	45 (24.1%)	84 (37.5%)	32 (25.4%)
P-value	<0.001 **		<0.001 **		0.067	
Educational level						
Diploma or below	48 (21.3%)	41 (32.8%)	53 (32.5%)	36 (19.3%)	72 (32.1%)	17 (13.5%)
University/higher	177 (78.7%)	84 (67.2%)	110 (67.5%)	151 (80.7%)	152 (67.9%)	109 (86.5%)
P-value	0.018 **		0.004 **		<0.001 **	
Occupation						
Unemployed	81 (36.0%)	39 (31.2%)	56 (34.4%)	64 (34.2%)	74 (33.0%)	46 (36.5%)
Employed	144 (64.0%)	86 (68.8%)	107 (65.6%)	123 (65.8%)	150 (67.0%)	80 (63.5%)
P-value	0.365		0.979		0.511	
Type of car						
Small	121 (53.8%)	61 (48.8%)	88 (54.0%)	94 (50.3%)	119 (53.1%)	63 (50.0%)
Family	104 (46.2%)	64 (51.2%)	75 (46.0%)	93 (49.7%)	105 (46.9%)	63 (50.0%)
P-value	0.372		0.487		0.574	
With driving license						
Yes	217 (96.4%)	125 (100%)	155 (95.1%)	187 (100%)	216 (96.4%)	126 (100%)
No	08 (03.6%)	0	08 (04.9%)	0	08 (03.6%)	0
P-value	0.033 **		<0.001 **		0.032 **	

practices ( $P$  0.641). There were significant association between number of children versus knowledge ( $P$  0.007) and attitude ( $P$  0.009) however, no relationship found on practices ( $P$  0.225). Child interval also shows significant difference for both knowledge ( $P < 0.001$ ) and attitude ( $P < 0.001$ ) but

not with practices ( $P$  0.067). Educational level has significant relationship on knowledge ( $P$  0.018), attitude ( $P$  0.004), and practices ( $P < 0.001$ ). Occupation has no significant association on knowledge, attitude, and practices, and it shows the same on the type of car. However, driving license has shown significant



association on knowledge ( $P$  0.033), attitude ( $P < 0.001$ ), and practices ( $P$  0.032).

## Discussion

One of the most important jobs as a parent is keeping your child safe when riding in a vehicle. Each year, thousands of young children are killed or injured in car crashes. Proper use of car safety seats helps to keep children safe.<sup>[1]</sup> In our study, more parents do not put baby seat in the car (57.3%) while 57 participants use child seat every time the child rides in the car while others used child seat sometimes (34 participants) and more frequently (55 participants). In China, only 15.7% of parents indicated that they used a safety seat every time the child travelled in the vehicle.<sup>[2]</sup> This percentage was lower than the parents involved in our study. Moreover, we also observed that about 70% of the children who travelled in the car never used seatbelt and only 8.2% adhere to the seatbelt guidelines. In Canada, the adherence to seatbelt was higher (79.2%),<sup>[3,4]</sup> while in China it was lower (24.2%).

Many of the parents in our study were not aware of the importance of child safety seat and the most common reason they emphasized was about “child refusal” (22.8%) followed by “they do not view child safety seat as important” (22.3%). Rebecca and her colleagues stated that, in China, the most common reasons for not using a safety seat were about “difficulties on finding safety seat followed by the cost.”<sup>[5]</sup> Although causes were different from the perspective point of view, this might be attributed according to the perception of each country in relation to their view on how they can protect their child when riding in a car.

A study published by Biagioli elaborated that the backward seat is the best place for an infant (rear facing). Facing the rear minimizes the risk of head and neck injury in the event of a crash. In a frontal crash, the back of the safety seat supports the child’s head and neck. He further emphasized that, if an infant is facing forward, the harness restrains the body, but the head and neck remains unrestrained and whip forward in rapid flexion, potentially causing injury.<sup>[6]</sup> In connection with this, our study results deemed, 125 (64.4%) of participants observed to place the child in the back seat while driving and on the other hand 69 of them put the child in front seat. Pan *et al.* reported that 83.1% of parents from China allowed their child to sit separately in the rear seat, which was more than our study findings.<sup>[7]</sup>

Overall, there were 225 (64.3%) of participants who were having poor knowledge, while 125 (35.7%) were having good knowledge; attitude shows that 163 (46.6%) of the participants were having negative attitude and 187 (53.4%) were having positive attitude; practices revealed that 224 (64.0%) of them were having poor practices and on the other hand 126 (36.0%) of them were having good practices. We observed that the prevalence of KAP of parents in regards to the children car safety seat in this study was quite alarming as most of them were having poor perception in the subject, which might be one of the reasons of children mortality rate here in Saudi Arabia.

We also found out some significant association between KAP and the sociodemographic data of parents such as gender by attitude, significant difference for both knowledge and attitude for the following demographic variables such as age group in years, relationship to child, having children, number of children, and child interval whereas educational level and having driving license found to have positive relationship against the three outcome variables (KAP). In Saudi Arabia, this is the first study that examined the relationship between sociodemographic characteristics of parents and KAP, which we deemed as one of the most important factors in measuring the adherence of parents toward children safety seat. However, further investigations are needed to validate the knowledge, attitude, and practices of parents toward children safety seat as missing cases might play a vital role in the generalization of the results.

## Conclusion

Despite the fact that most parents included in this study were women, still the overall knowledge, attitude, and practices toward children car safety seat in this study was relatively low. This signifies the need of parents to step up their awareness to safe guard their children while on the road. To decrease the mortality rate of vehicular accident, parents should consider all possible safety precautions while driving.

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## Conflicts of interest

There are no conflicts of interest.

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