Maternal Awareness and Practice of Child Trauma, Saudi Arabia

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Abstract

Introduction: Childhood injury is a neglected public health problem with a sizeable burden on children's well-being and their families. Unintentional injury is one of the leading causes of mortality and morbidity among children.

Aim: The current study aimed to assess maternal knowledge and awareness about child trauma in Saudi Arabia.

Methods: A cross-sectional study was conducted on accessible and eligible mothers of children in a hospital from June 2024 to mid-august 2024. The study used a pre-structured questionnaire to collect bio-demographic data, child trauma history, and awareness about child trauma. The questionnaire's validity and reliability were assessed through a pilot study and expert review. The final questionnaire was distributed online to eligible participants until no new participants were obtained.

Results: A total of 351 (73.1%) mothers reported that at least one of their children was previously injured which was for 2-3 times among 160 (45.6%) of them, and for more than 3 times among 130 (37%). The most reported causes of injury were accidents (54.2%), fall from height (52%). As for awareness level, a total of 161 (33.5%) mothers had an overall good awareness about child trauma while the vast majority (66.5%) had poor awareness level.

Conclusion: The study found that most children experience childhood trauma, mainly contusions and fractures from falls or accidents. Mothers lack knowledge about first aid and preventive measures. Efforts to develop evidence-based educational programs are needed. National assessments are needed.

Keywords:
Child trauma, prevalence, mothers, awareness, practice, predictors, Saudi Arabia.

Introduction

Recently, many environmental and daily life factors have an impact on children's health now and in the future (1, 2). Because of their carelessness and lack of understanding about the nature of potentially harmful materials, children are more prone to trauma and injury (3). Children's injuries are particularly worrying (3, 4). In 2011, injuries claimed more than 630,000 lives among children (5). According to the Centers for Disease Control and Prevention (CDC), the leading cause of death from unintentional injuries was MVC followed by drowning, burns, and suffocation, whereas unintentional fall remains the most common cause for nonfatal injuries (6).

According to the GBD, unintentional injuries and transport injuries were two of the top 10 causes of death in Saudi Arabia (7). Injuries were the primary cause of the majority of avoidable fatalities among Saudi Arabian youngsters (82.5%) (8). MVC, which accounted for 60.6% of injury deaths, was most common among 13–18-year-olds. Drowning, which accounted for 13.4% of injury deaths, was most common among 6–12-year-olds (8).

Chronic health issues such as depression; asthma, heart disease, and obesity are linked to early and cumulative trauma exposure during critical developmental stages in children's lives (9-11). Research shows that childhood trauma has both immediate and long-term effects on childhood, adolescent, and early adult outcomes, in addition to intergenerational effects (12-15). As a result, treating childhood trauma has become increasingly important for public health (16).

Understanding and identifying the common behavioural and health requirements of young children who have suffered trauma is crucial for parents of young children as well as Early Childhood Education (ECE) caregivers (17). As awareness of this grows, attitudes toward how parents and ECE providers address the needs of their children may also change. According to Traub and Boynton-Jarrett (2017), this is a crucial initial step toward eventually changing parenting and caregiver behaviors to better fit with trauma informed care (18). The current study aimed to assess maternal awareness and practices about child trauma as well as to assess child trauma rate and associated risk factors among Saudi children.

Methodology

A descriptive cross-sectional study was conducted targeting all accessible and eligible mothers of children available in the study setting at the study hospital during the period from June 2024 to mid-august 2024. Mothers aged less than 18 years, those with no children less than 14 years and mothers who refused to participate or who did not complete the study questionnaire were excluded. Participants were recruited using convenience sampling method. A pre-structured questionnaire was used as the data collection tool. The study questionnaire included participants' bio-demographic data including age gender, education, employment and residence and the data of their children aged less than 14 years. Also, mother's residence area, type and level was assessed. The second section covered child trauma history among mothers including causes of trauma, types, frequency and sites of child trauma. The third section covered mother's awareness about child trauma with one or more correct answers per question and mothers' source of information about child trauma. The study questionnaire validity and reliability were assessed via pilot study on 25 participants and experts' review. Any modifications were applied until achieving the study questionnaire that was used. The tool reliability was 0.73 based on α-Cronbach's. The final study questionnaire was distributed online via social media platforms to all eligible participants by the study researchers and their families until no more new participants were obtained.

Data analysis

The data were collected, reviewed and then fed into Statistical Package for Social Sciences version 26 (SPSS: An IBM Company). All statistical methods used were two tailed with alpha level of 0.05 considering significance of P value less than or equal to 0.05. An overall awareness score was computed by summing the correct answers where correct answers were given 1-point score and 0 was given otherwise. Mothers with knowledge score less than 60% of the total correct answers were considered with poor awareness level while others with knowledge score of 60-100% were considered to have good awareness about child trauma. Descriptive analysis was done by prescribing frequency distribution and percentage for study variables including mother's personal data, residence data, employment, and their children's data. Also, child trauma data and its frequency, associated factors, and site of injury, besides maternal awareness and practice of Child Trauma, were tabulated while the overall awareness level and source of information were graphed. Cross tabulation was done for showing factors associated with mother's awareness about child trauma and factors associated with child trauma as reported by their mothers using Pearson chi-square test and exact probability test for small frequency distributions.

Results

A total of eligible 480 mothers completed the study questionnaire. Mothers' ages ranged from 20 to 57 years with a mean age of 31.5 ± 8.6 years old. A total of 321 (66.9%) were in an urban residence, 270 (56.3%) resided in rented units and 258 (53.8%) residents were on the ground floor. As for social status, 289 (60.2%) were married, 159 (33.1%) were separated and 32 (6.7%) were widows. Exactly 226 (47.1%) had secondary education, and 190 (39.6%) had university level of education. Considering employment, 225 (46.9%) were housewives, 124 (25.8%) worked in the governmental sector, and 99 (20.6%) in the private sector. Monthly income less than 5000 SR was reported among 192 (40%) of mothers while 130 (27.1%) had monthly income exceeding 10000 SR. A total of 384 (80%) were Saudi mothers. As for children's data, most of the mothers had 1-2 children below the age of 14 years where the child was the first for 129 (26.9%) mothers and second for 220 (45.8%). The youngest child was male for 284 (59.2%) and female for 196 (40.8%) mothers (Table 1).

(Table 2). A total of 351 (73.1%) mothers reported that at least one of their children was previously injured which was for 2-3 times among 160 (45.6%) of them, and for more than 3 times among 130 (37%). The most reported causes of injury were accidents (54.2%), fall from height (52%), physical abuse (hitting; 41.7%), injury during playing (34%) and burns (28.7%). The most reported types included bruises and cuts (64.4%), fractures (36.8%), burns (28.7%), and poisoning (17.9%). Regarding site of injury, shoulder / upper extremities was the most frequent site (54.7%), followed by head (54.4%), the back (37%), neck (31.3%), and lower extremities (18.8%).

Table 1. Socio-demographic characteristics of study mothers and their children, Saudi Arabia (n=480)

Socio-demographic data	No	%
Age in years		
< 30	225	46.9%
30-39	161	33.5%
40+	94	19.6%
Residence		
Urban	321	66.9%
Rural	159	33.1%
Residence type		
Private	210	43.8%
Rented	270	56.3%
Residence level		
Ground floor	258	53.8%
High floor	222	46.3%
Social status		
Married	289	60.2%
Separated	159	33.1%
Widow	32	6.7%
Educational level		
Below secondary	64	13.3%
Secondary	226	47.1%
University / above	190	39.6%
Employment		
Housewife	225	46.9%
Governmental sector	124	25.8%
Private sector	99	20.6%
Retired	32	6.7%
Monthly income		
< 5000 SR	192	40.0%
5000-10000 SR	158	32.9%
> 10000 SR	130	27.1%
Nationality		
Saudi	384	80.0%
Non-Saudi	96	20.0%
Children aged less than 14 years		
1-2 children	256	53.3%
3-4 children	224	46.7%
Child order		
First	129	26.9%
Second	220	45.8%
After second	131	27.3%
Child gender		
Male	284	59.2%
Female	196	40.8%

Table 2. Prevalence and pattern of child injury as reported by study mothers, Saudi Arabia (n=480)

Child injury data	No	%
Have any of your children been previously injured?		
Yes	351	73.1%
No	129	26.9%
If the answer is yes, the average number of injuries per month (n=351)		
1 time	61	17.4%
2-3 times	160	45.6%
> 3 times	130	37.0%
The cause of the child injury (n=351)		
Accident	174	54.2%
Fall from height	167	52.0%
Physical abuse	134	41.7%
Injury during playing	109	34.0%
Burn	92	28.7%
The type of child injury (n=351)		
Bruises and cuts	226	64.4%
Fracture	129	36.8%
Others	97	27.6%
Burns	92	28.7%
Poisoning	63	17.9%
Site of injury (n=351)		
Shoulder / upper extremities	192	54.7%
Head	191	54.4%
The back	130	37.0%
Neck	110	31.3%
Lower extremities	66	18.8%
Chest	18	5.1%

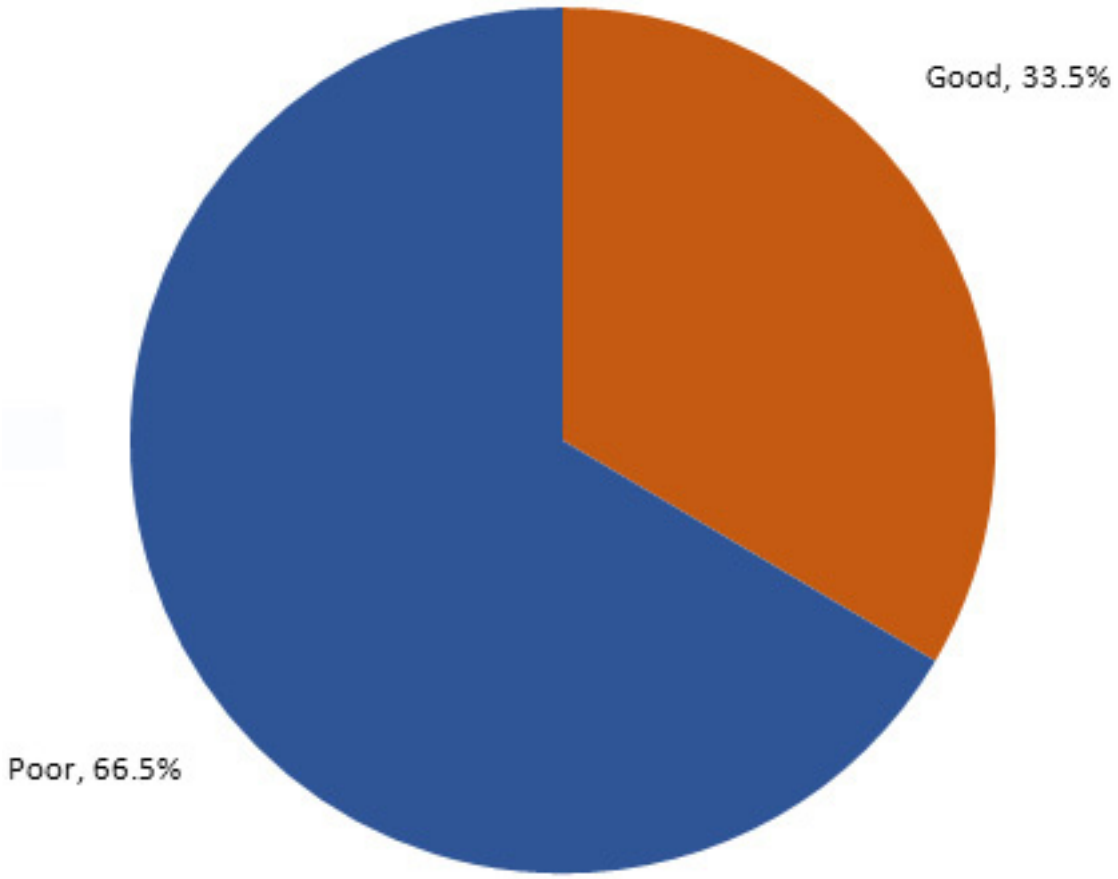
A total of 323 (67.3%) of mothers know about child trauma. As for types, the most known child trauma included fractures (78.8%), burns (59.2%), bruises and cuts (39%), and poisoning (30%). Also, the most known causes of child injuries were playing without safety factors (70.2%), fall (46.5%), physical abuse (28.1%), burns (27.5%), RTA (20%), and poisoning (8.8%). Considering symptoms of childhood injuries, the most known were avoid movement (67.3%), problems with sleeping and eating (54%), aggression (54%), and extreme fear (32.7%). The most reported preventive measures of child trauma by the study mothers included; Prevent children from carrying sharp tools (53.8%), Keep children away from hot and burning materials (49.2%), use designated child seats in the car (45.4%), use baby strollers (45%), and providing safety means at home (42.5%). A total of 220 (45.8%) mothers reportedthat calling emergency is the first action with child trauma, 213 (44.4%) reported going to hospital and 117 (24.4%) said not to move the child but 97 (20.2%) said doing nothing.

Table 3. Maternal awareness and practice of Child Trauma, Saudi Arabia

Awareness items	No	%
Do you know about the child's trauma?		
Yes	323	67.3%
No	157	32.7%
What are the types of injuries in children?		
Fractures	378	78.8%
Burns	284	59.2%
Bruises and cuts	187	39.0%
Poisoning	144	30.0%
Others	98	20.4%
What are the causes of injuries in children?		
Playing without safety factors	337	70.2%
Fall from a height	223	46.5%
Physical abuse	135	28.1%
Burns	132	27.5%
RTA	96	20.0%
Poisoning	42	8.8%
Excessive movement	34	7.1%
Diseases complications	29	6.0%
What are the symptoms of childhood injuries?		
Avoid movement	323	67.3%
Problems with sleeping and eating	259	54.0%
Aggression	259	54.0%
Extreme fear	157	32.7%
Irritability	92	19.2%
Preventive measures of child injuries		
Prevent children from carrying sharp tools	258	53.8%
Keep children away from hot and burning materials	236	49.2%
Use designated child seats in the car	218	45.4%
Use of baby strollers	216	45.0%
Providing safety means at home	204	42.5%
Safety gates	120	25.0%
What is the first practice to deal with children's injuries?		
Calling emergency	220	45.8%
Going to hospital	213	44.4%
Do not move the child	117	24.4%
Nothing	97	20.2%

Overall maternal awareness level about child trauma, Arabia. A total of 161 (33.5%) mothers had an overall good awareness about child trauma while the vast majority (66.5%) had poor awareness level.

Figure 1. Overall maternal awareness level about child trauma, Arabia



Factors associated with mother's awareness about child trauma, Saudi Arabia. A total of 36.2% of old aged mothers had an overall good awareness about child trauma versus 27.6% with a recorded statistical significance (P=.026). Also, 42.7% of those in urban areas had an overall good awareness compared to 15.1% of rural residents (P=.001). Good awareness about child trauma was detected among 54.5% of mother residents in high floors and among 63.7% of highly educated mothers compared to 23.4% of low educated mothers (P=.001). A total of 78.2% of mothers in the governmental sector had high awareness level in comparison to none of retired and 17.8% of unemployed mothers (p=.001). A total of 72.9% of non-Saudi mothers had good awareness, as did 53.9% of mothers with 1-2 children, and 38.7% of those with previously injured child versus 19.4% of those without (P=.001).

Table 4. Factors associated with mother's awareness about child trauma, Saudi Arabia

Factors	Overall knowledge level				p-value
	Poor		Good		
	No	%	No	%	
Age in years					
< 30	163	72.4%	62	27.6%	.026*
30-39	96	59.6%	65	40.4%	
40+	60	63.8%	34	36.2%	
Residence					
Urban	184	57.3%	137	42.7%	.001*
Rural	135	84.9%	24	15.1%	
Residence level					
Ground floor	218	84.5%	40	15.5%	.001*
High floor	101	45.5%	121	54.5%	
Social status					
Married	185	64.0%	104	36.0%	.069^
Separated	102	64.2%	57	35.8%	
Widow	32	100.0%	0	0.0%	
Educational level					
Below secondary	49	76.6%	15	23.4%	.001*
Secondary	201	88.9%	25	11.1%	
University / above	69	36.3%	121	63.7%	
Employment					
Housewife	185	82.2%	40	17.8%	
Governmental sector	27	21.8%	97	78.2%	.001*^
Private sector	75	75.8%	24	24.2%	
Retired	32	100.0%	0	0.0%	
Nationality					
Saudi	293	76.3%	91	23.7%	.001*
Non-Saudi	26	27.1%	70	72.9%	
Children aged less than 14 years					
1-2 children	118	46.1%	138	53.9%	.001*^
3-4 children	201	89.7%	23	10.3%	
Youngest child order					
First	83	64.3%	46	35.7%	.057
Second	138	62.7%	82	37.3%	
After second	98	74.8%	33	25.2%	
Child gender					
Male	188	66.2%	96	33.8%	.884
Female	131	66.8%	65	33.2%	
Have any of your children been previously injured?					
Yes	215	61.3%	136	38.7%	.001*
No	104	80.6%	25	19.4%	

P: Pearson X2 test ^: Exact probability test * P < 0.05 (significant)

Factors associated with child trauma as reported by their mothers, Saudi Arabia. Higher incidence of child trauma was reported among all aged mothers, 81.1% of rural areas, 85.1% of high floor residents, all low educated mothers' children, all non-Saudi mothers' children, 86.8% of mothers with 3-4 children, all older children and 89.4% of male children (P<0.05 for all).

Table 5. Factors associated with child trauma as reported by their mothers, Saudi Arabia

Factors	Have any of your children been previously injured?				p-value
	Yes		No		
	No	%	No	%	
Age in years					
< 30	126	56.0%	99	44.0%	.001*
30-39	131	81.4%	30	18.6%	
40+	94	100.0%	0	0.0%	
Residence					
Urban	222	69.2%	99	30.8%	.005*
Rural	129	81.1%	30	18.9%	
Residence level					
Ground floor	162	62.8%	96	37.2%	.001*
High floor	189	85.1%	33	14.9%	
Social status					
Married	220	76.1%	69	23.9%	.001*
Separated	99	62.3%	60	37.7%	
Widow	32	100.0%	0	0.0%	
Educational level					
Below secondary	64	100.0%	0	0.0%	.001*
Secondary	130	57.5%	96	42.5%	
University / above	157	82.6%	33	17.4%	
Employment					
Housewife	129	57.3%	96	42.7%	
Governmental sector	124	100.0%	0	0.0%	.065^
Private sector	66	66.7%	33	33.3%	
Retired	32	100.0%	0	0.0%	
Nationality					
Saudi	255	66.4%	129	33.6%	.001*^
Non-Saudi	96	100.0%	0	0.0%	
Children aged less than 14 years					.001*
1-2 children	157	61.3%	99	38.7%	
3-4 children	194	86.6%	30	13.4%	
Child order					
First	60	46.5%	69	53.5%	.001*
Second	160	72.7%	60	27.3%	
After second	131	100.0%	0	0.0%	
Child gender					
Male	254	89.4%	30	10.6%	.001*
Female	97	49.5%	99	50.5%	

P: Pearson X2 test ^: Exact probability test * P < 0.05 (significant)

Discussion

The current study aimed to assess maternal knowledge and awareness about child trauma and also to assess frequency rate of child trauma among study participants. Annually, millions of children are sent to hospitals for injuries from accidents that result in permanent disabilities, and thousands of children worldwide pass away as a result of these incidents (19). Accidents affect a person's physical, mental, and social well-being and can result in illnesses, impairments, or even fatalities. Accidents can happen in many different places, but the home is where they happen most frequently when they involve children (20). The preschool years are a crucial time in a child's development, and because of their natural curiosity to explore the environment and their incapacity to understand the risks of their actions that could result in harm or disability, preschoolers are particularly prone to injuries and accidents at home (21).

As for child trauma, the current study revealed that the vast majority of mothers had a child with previous history trauma / injury which was also frequent among most of them. Bruises and cuts, fractures and burns were the most frequent, mainly at upper extremities, head and neck. Accidents, fall, physical abuse and burns were the most reported causes of trauma / injury. Similar findings were reported by Almalki MM et al. (22) in Makkah where about 69% of children experienced trauma, with fall from height the most reported cause and extremities and head were the most affected sites. Another study by Albedewi H et al. (23) found that falls represented 31.9% of child trauma, but 25.1% were due to Motor Vehicle accidents. The main cause of fractures was falls (37.9%), then car accidents (21.5%). Other studies revealed that the child trauma rate was 47.6% (24-33). Children with old aged mothers, those in rural residence, those in residence on higher floors, low education, and mothers with 3-4 children and male children showed significantly higher trauma rate. Many other studies revealed that male children were more liable for trauma (24, 30, 32). Fall from height and MVA with fracture injuries were also the most reported by many studies which are consistent with the current study findings (34-39).

With regard to maternal awareness about child trauma, the current study showed that only one-third of the study mothers were knowledgeable about child trauma irrespective that two-thirds claimed they know about the issue. Higher awareness was about types, causes and symptoms associated with child trauma. Lower awareness was reported for preventive measures and first aid of the trauma. Old age, residence, high education, and having history of child trauma were significantly associated with higher awareness level. Another study by Soltani R and Jahanmehr S (40) revealed that only 28.8% of the mothers had good knowledge about child trauma and its preventive measures which is consistent with the current study findings. In Lebanon, a study showed that more than one-third of the mothers had poor knowledge, while the vast majority showed poor practice level. A much better awareness was reported by Anwar MM (41), Eldosoky RSH (42) where about 83% of the mothers had satisfactory knowledge about child trauma. Another study revealed that about three-quarters of the mothers were knowledgeable about child trauma with a similar high knowledge reported in Nigeria (43) and Saudi Arabia (44).

If early identification and helpful, trauma-informed measures are given, children who have experienced trauma need not have poor physical and mental health outcomes. Early care and education (ECE) settings' caregivers, including parents of small children, should find this especially pertinent. Trauma-informed care can help children in their early years develop resilience and stable attachment relationships with their caregivers, as well as lessen the effects of trauma on brain development and neurophysiology. (18, 45)

Conclusions and Recommendations

In conclusion, the current study revealed that most of the children experienced childhood trauma, mainly contusions and fractures due to falls or accidents which is consistent with the literature findings. Also, the study mothers lack knowledge about child trauma mainly first aid and its preventive measures. Coordinated efforts are needed to create and develop evidence-based educational programs for mothers to help in reducing child trauma rate and associated risks. A national assessment of the burden of childhood injuries, their determinants and risk factors, and the scope of this significant health issue requires more investigation.

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