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Assessment of Knowledge, Attitude and Practice towards Cervical-Spinal Injury Among Adults in Dammam City, 2017

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ABSTRACT

Background: Spinal cord injuries (SCI) are life threatening and most prevalent crises around the world thus the first aid from society population could be helpful for proper management by health care professionals

Objectives: Evaluate the KAP of Saudi adults toward CSIs in Dammam City, Kingdom of Saudi Arabia (KSA). **Methods: A** cross sectional community questionnaire based survey that was carried out in 30 shopping malls of Dammam City among 700 Saudi subjects from May to July 2017.

Results: Most of the subjects (90.4%) had excellent and good knowledge about CSI, 58.9% had positive attitude, 7.3% showed a right practice, while practice of 69.5% was right but not complete and the rest had poor practice. There was a significant relation between knowledge score and Attitude score but not with the practice score. Also, there was a positive relation between the practice score and the attitude score. The older age and working status showed a significant relation with the knowledge score and the male showed a more significant right practice compared to females.

Conclusion: Most of the subjects had significant knowledge, attitude. However, low level of right and complete practices was obvious due to inadequate educational training programs attended by the participants about first aid of CSI patients.

Keywords: Knowledge, Attitude, Practice (KAP), Cervical -spinal injury, adults, Dammam city, KSA.

INTRODUCTION

Spinal cord injuries (SCI) are life threatening and represent most of the prevalent crises around the world [(1)]. Annual statistical reports estimated an average 20-50 subjects suffer from SCI out of 1,000,000 subjects in the world [(2)].Also, among those affected with cervical spine injuries, 10-50% of subject will suffer from SCI [(3, 4)]. The mechanism of cervical spine injuries (CSIs) are accidents due to motor vehicle [(5)], trauma or falls [(6, 7)]. The victims of cervical spine injuries are males than females [(8, 9)]. Also, the incidence rate of cervical spine injuries is higher among population aged from 15-45 years or 65 to 80 years old [(10, 11)].

The CSIs can result from multiple blunt traumatic injuries and will cause a devastating sequel with many disabilities. Also, other disorders that associated with CSIs are sensory and motor deficits, requiring longevity medical and physical management as well as bowel and bladder dysfunction. Thus, diagnosing and early identification of CSIs is the issue of focus for all healthcare professionals among traumatized patients [(12)]. Also, the mechanism of injury has linked CSI with blunt multiple trauma, facial trauma, head injury and back bone injuries [(9, 13-15)].

Another concern of researchers in early identification of these injuries is finding an association between CSIs and other specific injuries to avoid tearing of spinal cord and thus prevent further complications and disabilities [(16)]. Controlling the spinal mobilization and enhancing the detection of cervical spine injuries during primary and secondary health care are important factors for avoiding additional injury of the spinal cord. However, identification of cervical spine injury is a challenge especially during the evaluation of the initial trauma because most of patients usually admitted with low level of consciousness due to sedatives, analgesic drugs, concurrent head injury or endotracheal intubation. In these circumstances, the first aid from society population will be helpful for proper management by health care professionals [(9, 11)]. This study was conducted to evaluate the KAP of Saudi adults toward CSIs in Dammam City, Kingdom of Saudi Arabia (KSA).

SUBJECTS AND METHODS

Study design

It is a cross sectional community questionnaire based survey that was carried out in 30 shopping malls of Dammam City from May to July 2017.

Study population and sample size

The study included adult Saudi subjects who can read and write. After reviewing the whole population of Dammam City as shown by the General Authority for Statistics (GAS), KSA in 2016 [(17)], the sample size was calculated using the web calculator[(18)]with a response rate of50%, a 95% confidence interval and a margin of error of 5%. The sample size was then increased to avoid

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incomplete data. The estimated sample size was 700 subjects.

Study tools

According to our knowledge this study is the first study conducted to evaluate the KAP toward CSIs thus, the study tool was a questionnaire that was collected after reviewing all the available English studies conducted on the risk factors, first aid, and management of CSIs. The included search engines were Pubmed, SCOPUS, Researchgate, Google scholar, sciencedirect,..*etc.* After collecting the data of the questionnaire, the supervisors reviewed it to test its viability. Then the extracted and validated questionnaire were translated into Arabic language and distributed among all the participants included in the study. The questionnaire involved 4 parts assessing the demographics of respondents, knowledge, attitude and practice.

Follow up

After filling up the questionnaire sheet, all the participants received handouts and attended a non-paid course for one hour about CSIs, their risk factors and management.

Ethical approval

An approval was given by the supervisors about the study protocol and the questionnaire. A written informed contest was included from all respondents enrolled in the study. **The study was done after approval of ethical board of King Faisal university**.

Statistical analysis

Data were fed to the computer using IBM SPSS software package version 20.0. Qualitative data were described using number and percent. Comparison between different groups regarding categorical variables was tested using Chi-square test.

RESULTS

Demographics of the studied subjects:

The demographics of included subjects are shown in Table 1.

Table (1): Demographic data of the studied group

	Number	Percent
Age group		
20-25	292	40.4
25-35	181	25.1
35-45	132	18.3
+45	117	16.2
Sex		
Male	235	32.5
Female	487	67.5
Education		
Less than secondary	7	1.0
Secondary	155	21.5
University	531	73.5
High university	29	4.0
Occupation		
Student	204	28.3
House wife	57	7.9
No work	138	19.1
Office worker	282	39.1
Hard worker	17	2.4
Retired	24	3.3

Assessment of knowledge of included subjects:

The knowledge of the included subjects is presented in Table1. Most of the subjects had good knowledge regarding the definition and anatomy of the cervical vertebrae, the risk factors and effects of CSI as well as the first aid management procedures.

Table (2): Distribution of the studied subjects regarding the correct answer about knowledge.

Knowledge	Number	Percent
The cervical spine consists of 7 cervical vertebrae	627	86.8
The cervical spine is separated by intervertebral disks and joined by ligaments.	638	88.4
Accidents, collisions and falls are the most common risk factors for CSI	693	96.0
Blunt multiple trauma, facial trauma, head injury and back bone injuries are major sources of CSIs	593	82.1
CSIs can result in further damage to the spinal cord	655	90.7
CSIs can result in many longevity disabilities.	636	88.1
Sensory and motor deficits as well as bowel and bladder dysfunction are complications of CSIs	399	55.3
CSI patients may require medical and physical management for their whole life.	570	78.9
The first aid is through minimizing the movement of the patients during transportation.	682	94.5
Early prediction of CSI will help in avoiding its complications and long life disabilities.	675	93.5

- **Evaluating the subject's attitude**

The attitude of the subjects is presented in Table. 3. Most of the subjects had a compensation attitude toward CSI patients. The majority of them had positive attitude toward helping the people after accidents as well as the treatment of CSI and the effects on quality of life.

Table (3): Distribution of the studied subjects regarding the positive answer about attitude.

Attitude	Number	Percent
What do you think when you see CSI patients? (compensation, helpless)	520	72.0
I will help people suffering from car accidents or falls?	591	81.9
CSI is non-treatable disorder?	590	81.7
CSI will affect the patient's quality of life all their life	213	29.5

Practice pattern of included subjects

The respondent's practice is shown in Table. 4. The level of practice was sufficient among most of the respondents as the majority would help traumatized patients and will not move them and call the ambulance. On the other hand, only 9.3% have been included in first aid training programs for CSI patients.

Table (4): Distribution of the studied subjects regarding the positive answer towards practice

Practice	Number	Percent
• When seeing a traumatized patients will you help him?	585	81.0
• I will try not to move the patient and call an ambulance?	678	93.9
• Have you ever participated in campaigns that concern the CSI and how to deal with the patients?	67	9.3

Level of knowledge, attitude and practice among respondents

Table (5), shows the distribution of the studied groups regarding their knowledge, attitude and practice. Regarding knowledge scale, it was found that 653 (90.4%) was excellent and good and only 9.6% was fair and poor. In regard to attitude score, it was found that 58.9% positive attitude, the negative attitude in 101 subjects (14.0%). Regarding the practice score, it was found that only 7.3% showed a right practice, while 69.5% their practice was right but not complete and 23.1% was wrong practice.

Table (5): Distribution of the studied group regarding their knowledge, attitude and practice

	Number	Percent
Knowledge score		
Excellent	543	75.2
Good	110	15.2
Fair	44	6.1
Poor	25	3.5
Attitude score		
Positive	425	58.9
Neutral	196	27.1
Negative	101	14.0
Practice score		
Right	53	7.3
Right but not complete	502	69.5
Wrong	167	23.1

- **Correlations**

Table (6) shows the relation between knowledge score and both Attitude score and practice score, it was found that there was a positive significant relation between the knowledge score and the attitude score, the high level of knowledge show a positive attitude, while there was no relation between the knowledge and practice score.

Table (6): Relation between knowledge score and both Attitude score and practice score

	Knowledge score								Total		
	Excellent		Good		Fair		Poor				
	No.	%	No.	%	No.	%	No.	%	No.	%	
Attitude score											
Positive	302	55.6	75	68.2	32	72.7	16	64.0	425	58.9	12.033[a]
Neutral	155	28.5	24	21.8	10	22.7	7	28.0	196	27.1	0.003
Negative	86	15.8	11	10.0	2	4.5	2	8.0	101	14.0	
Practice score											
Right	42	7.7	6	5.5	2	4.5	3	12.0	53	7.3	7.647
Right but not complete	387	71.3	71	64.5	30	68.2	14	56.0	502	69.5	0.265
Wrong	114	21.0	33	30.0	12	27.3	8	32.0	167	23.1	

Table (7), presents the relation between attitude score and practice score. It was found that there was a positive relation between the practice score and the attitude score, the right practice group showed positive attitude.

Table (7): Relation between attitude score and practice score

	Practice score						Total		X^2 p
	Right		Right but not complete		Wrong				
	No.	%	No.	%	No.	%	No.	%	
Attitude score									32.662
Positive	28	52.80%	327	65.10%	70	41.90%	425	58.90%	0.0001*
Neutral	19	35.80%	119	23.70%	58	34.70%	196	27.10%	
Negative	6	11.30%	56	11.20%	39	23.40%	101	14.00%	

Table (8), demonstrates the relation between knowledge score and demographic data. It was observed that the age showed a significant effect on knowledge score, the old age exhibited an excellent knowledge.

Also there was a relation between occupation and level of knowledge, the house wife and student displayed the majority of fair and poor knowledge.

Table (8): Relation between knowledge score and demographic data

	Knowledge score								Total		X^2 p
	Excellent		Good		Fair		Poor				
	No.	%	No.	%	No.	%	No.	%	No.	%	
Age group											
20-25	53	18.2	25	8.6	14	4.8	53	18.2	292	40.4	27.385 0.001*
25-35	133	73.5	32	17.7	7	3.9	9	5.0	181	25.1	
35-45	117	88.6	11	8.3	4	3.0	0	0.0	132	18.3	
+45	93	79.5	14	12.0	8	6.8	2	1.7	117	16.2	
Sex											0.294 0.961
Male	178	75.7	34	14.5	14	6.0	9	3.8	235	32.5	
Female	365	74.9	76	15.6	30	6.2	16	3.3	487	67.5	
Education											
Less than secondary	4	57.1	2	28.6	1	14.3	0	0.0	7	1	12.858 0.169
Secondary	107	69.0	33	21.3	10	6.5	5	3.2	155	21.5	
University	412	77.6	72	13.6	29	5.5	18	3.4	531	73.5	
High university	20	69.0	3	10.3	4	13.8	2	6.9	29	4	
Occupation											
Student	144	70.6	33	16.2	18	8.8	9	4.4	204	28.3	28.197 0.02*
House wife	44	77.2	7	12.3	6	10.5	0	0.0	57	7.9	
No work	93	67.4	28	20.3	7	5.1	10	7.2	138	19.1	
Office worker	225	79.8	39	13.8	13	4.6	5	1.8	282	39.1	
Hard worker	15	88.2	2	11.8	0	0.0	0	0.0	17	2.4	
Retired	22	91.7	1	4.2	0	0.0	1	4.2	24	3.3	

Table (9), illustrates the relation between attitude score and demographic data, it was found that the female more positive attitude more than female, while the house wife had positive attitude more than the other occupation.

Table (9): Relation between attitude score and demographic data

	Attitude score								X^2 p
	Positive		Neutral		Negative		Total		
	No.	%	No.	%	No.	%	No.	%	
Age group									
20-25	163	55.8	82	28.1	47	16.1	292	40.4	7.908 0.245
25-35	105	58.0	55	30.4	21	11.6	181	25.1	
35-45	77	58.3	37	28.0	18	13.6	132	18.3	
+45	80	68.4	22	18.8	15	12.8	117	16.2	
Sex									16.874 0.0001*
Male	113	48.1	79	33.6	43	18.3	235	32.5	
Female	312	64.1	117	24.0	58	11.9	487	67.5	
Education									
Less than secondary	3	42.9	2	28.6	2	28.6	7	1	4.217 0.647
Secondary	95	61.3	37	23.9	23	14.8	155	21.5	
University	313	58.9	148	27.9	70	13.2	531	73.5	
High university	14	48.3	9	31.0	6	20.7	29	4	
Occupation									
Student	110	53.9	56	27.5	38	18.6	204	28.3	20.378 0.026*
House wife	43	75.4	9	15.8	5	8.8	57	7.9	
No work	90	65.2	36	26.1	12	8.7	138	19.1	
Office worker	162	57.4	79	28.0	41	14.5	282	39.1	
Hard worker	6	35.3	9	52.9	2	11.8	17	2.4	
Retired	14	58.3	7	29.2	3	12.5	24	3.3	

Table (10) reveals the relation between practice score and demographic data, the male show right practice more than females.

Table (10): Relation between practice score and demographic data

	Practice score								X^2 p
	Right		Right but not complete		Wrong		Total		
	No.	%	No.	%	No.	%	No.	%	
Age group									
20-25	18	6.2	201	68.8	73	25.0	292	40.4	7.647 0.265
25-35	17	9.4	119	65.7	45	24.9	181	25.1	
35-45	13	9.8	96	72.7	23	17.4	132	18.3	
+45	5	4.3	86	73.5	26	22.2	117	16.2	
Sex									
Male	30	12.8	144	61.3	61	26.0	235	32.5	18.586
Female	23	4.7	358	73.5	106	21.8	487	67.5	0.0001*
Education									
Less than secondary	0	0.0	5	71.4	2	28.6	7	1	6.581 0.361
Secondary	10	6.5	102	65.8	43	27.7	155	21.5	
University	40	7.5	379	71.4	112	21.1	531	73.5	
High university	3	10.3	16	55.2	10	34.5	29	4	
Crosstab									
Student	10	4.9	146	71.6	48	23.5	204	28.3	10.150 0.427
House wife	3	5.3	42	73.7	12	21.1	57	7.9	
No work	7	5.1	99	71.7	32	23.2	138	19.1	
Office worker	28	9.9	186	66.0	68	24.1	282	39.1	
Hard worker	3	17.6	12	70.6	2	11.8	17	2.4	
Retired	2	8.3	17	70.8	5	20.8	24	3.3	

DISCUSSION AND CONCLUSION

According to our knowledge, no pervious published studies neither international nor Saudi studies the KAP of community subjects toward the Cervical -spinal injury. These injuries are life threatening and can result in many disabilities and decreasing the quality of life and longevity of individuals. Also, it can result in many sensory and motor deficits as well as head, facial and backbone injuries so early diagnosing and proper first aid could result in decreasing the consequences of the injury and increase the favorable outcomes among traumatized patients [(12)].

This study identified the KAP of Saudi subjects related to CSI patients. Although most of the subjects had good knowledge and attitude toward physical activity, yet, the practice pattern was insufficient among most of them. Most of the subjects had significant knowledge, attitude but low level of right and complete practices were remarked due to lack of insufficient attended educational training programs about first aid of CSI patients.

The study has many strength factors including that it is the first study to assess the KAP of Saudi subjects toward first aid of CSI patients and the problem of between knowledge and practice pattern could be attributed to that the subjects may be afraid harming the patients thus avoid wrong practices.

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