The Egyptian Journal of Hospital Medicine (January 2018) Vol. 70 (10), Page 1773-1777

Risk Factors of Stroke among Young Adults in KSA

[1]Wejdan Nasser Al Maqbul, [1]Amina Abdo Salhi, [2]Sarah Naif Aldewish,[3]Sarrah Awad Alshammari, [1]Maram Mohammed Al Yami ,[2]Ahmed Maashi Alanazi

1. Najran University, 2. Faculty of Medicine, Almaarefa College,
3. Faculty of Medicine, University of Halal, Saudi Arabia

*Corresponding author Wejdan Nasser AL Magbul, E-mail: Dr.jode20 @hotmail.com

ABSTRACT

Background: Current literature suggests that hospitalization rates kept increasing with time because stroke risk factors such as high blood pressure, diabetes and obesity have been increasing in the general population. Moreover, stroke is particularly devastating among young people because of its disabling effects, which can last a lifetime. Stroke in young adults is often missed by less experienced clinicians due to its unexpectedness, leading to lost opportunities for intervention. **Aim of the study:** was to assess the awareness of young adults in KSA of the risk factors, signs and symptoms of stroke.

Methods: The present cross-sectional study enrolled 150 Saudi males and females who were randomly selected during the period from October2017 to December 2017.. A self-report questionnaire was used to evaluate STROKE awareness among participants while Statistical Package for Social Sciences (SPSS) method was used for data analysis.

Results: Our study revealed that the majority of participants were able to relate stroke to the correct underlying risk factors particularly obesity and smoking which score 85.3% and 84.0% respectively. Likewise, 75% agreed that fatty food is a contributing risk factor for stroke while only 61% thought that diabetic patients are at a higher chance for developing stroke. As for the signs of cerebral stroke, the majority of participants had basic knowledge on the signs and symptoms of stroke such as hypertension (83%), face drop , difficulty speech and arm Weakness(76%).In the meantime, Overall , an average of 13% of participants declared no knowledge across all questions. **Conclusions:** Our study revealed improved yet still insufficient knowledge of brain stroke among the study group of young Saudi females and males adults regardless to the age group since the majority of participants were able to correlate stroke with the key predisposing risk factors as well as the signs of stroke. This indicates that proper intervention was in place to spread the awareness of this crucial medical emergency. However, this effort needs to continue to further improve knowledge about stroke, risk reduction, and appropriate stroke response and prevention. Nevertheless, further studies should be conducted on a larger scale to make a definite conclusion on the regression of stroke awareness in young adults population in Saudi Arabia.

Keywords: stroke, Intravenous thrombolysis, hypertension, Ischemic stroke, awareness, Saudi Arabia.

INTRODUCTION

Stroke or cerebro-vascular accident (CVA)has become one of the leading causes of serious, long-term neurologic impairment and functional disability and is the cause of mortality globally [(1)].

It involves the rapid loss of brain function caused by a disruption of blood supply to the brain, which is usually triggered by ischemia (lack of blood flow) or blockage (thrombosis, arterial embolism) or a hemorrhage, However, there are no known drug therapies to improve recovery after stroke **[(1)].** Depending on the severity and type, stroke can leave an individual with a residual damage of physical, psychological, social and cognitive functions **[(2)]**.

The established risk factors, including arterial hypertension, diabetes mellitus, cigarette smoking, micro-vascular rupture, hyperlipidemia, age and observed comorbidity, such as sickle cell disease, human immunodeficiency virus/acquired immune deficiency syndrome infection and cerebral malaria are increasingly being encountered in the tropics **[(3)]**.

According to the World Health Organization (WHO), around 15 million people, all over the world suffer from stroke each year [(4)].

Stroke is being observed as a rapidly growing problem and an important cause of illness and death in Saudi Arabia. Therefore, it becomes one of the most imperative social and economic medical issues in the Kingdom [(5)]. Yet compared to developing countries, there is an obvious lack of research available on the incidence and prevalence along with the socio-demographic properties of stroke.

The objective of the present study is to evaluate and measure the knowledge of young adults about risk factor of stroke as well as their knowledge of the signs and symptoms of stroke.

Received: 20/12/2017
Accepted: 30/12/2017
DOI: 10.12816/0044751

SUBJECTS AND METHODS

Research population and sampling

The present cross-sectional study was carried out among 150 Saudi male and female adults who were randomly selected including medical personnel.

Research design

An exploratory cross-sectional design, using both quantitative and qualitative methods was used in this study. The questionnaire was divided into 2 sections, the first section was concerned with information of the participants, however the second section was examining the personal knowledge about stroke .

Statistical analysis

Data analysis was carried out using Microsoft Excel 2016 (Microsoft Corporation, Seattle, WA, USA).

RESULTS

Characteristics and demographic data of the participants

The study enrolled 150 Saudi Arabian participants from both genders (28.7% Males and 71.3% Females). The study population were divided into 4 age groups ranging from 16 to above 35 years old with the highest contribution percentage of the 29-35 years age group (34.7%) followed by 22-28 group (32.7%) then above-35 years group (19.3%) and finally the 16-21 years group (13.3%).

The educational level of the participants varied according to the age group and social level. Stage of education included middle and high school students, college students and graduates with the contribution percentages of 3.3% , 32% , 36.7% and 28% respectively. **Table 1**

Table 1 summarizes the outcome of section 1 of the questionnaire which is intended to collect data on the characteristics and demographic data of the participants.

Table 1: demographic data of the participants

Age					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	16-21 years	20	13.3	13.3	13.3
	22-28 years	49	32.7	32.7	46
	29-35 years	52	34.7	34.7	80.7
	> 35years	29	19.3	19.3	100
	Total	150	100	100	
Gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	43	28.7	28.7	28.7
	Female	107	71.3	71.3	100
	Total	150	100	100	
Education					
		Frequency	Percent	Valid Percent	Cumulative Percent
	Middle School	5	3.3	3.3	3.3
	High School	48	32	32	35.3
	Collage	55	36.7	36.7	72
	Graduated	42	28	28	100
	Total	150	100	100	

Table 2 summarizes the outcome of section 2 of the questionnaire assessing the participant's knowledge on stroke as follows:

- How will you evaluate your knowledge about Stroke? Highest percentage of participants (35.3%) estimated their knowledge about stroke by 0-4 .
- Do you think stroke is related to obesity? also Do you think the smoking is a risk factors of stroke? 85.3% answered "YES" while only 6.7 % answered "NO".

- As for questions on fatty food consumption relevance to stroke, 75.3 % of study population answered "YES" yet only 10.7 % answer "NO".
- Do you think the hypertensive patient has high chance for Stroke? The answer of "YES "83.3% agreed on this assumption while only 6.7 % disagreed.
- Do you think that diabetic patient has high chance Stroke? 60.7% of participants answered "YES" however, the answer of 24%was "I don't know" and 15.3% answered "NO".
- Do you think face drop , difficulty speech and arm Weakness maybe signs of Stroke ? The answer was "YES" by the majoriy of the participants (75.3 %), "l don't know" by 14.7% and "NO" by 9.3 %.

Table 2: the outcome of the

How will you evaluate your knowledge about Stroke?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	1	0.7	0.7	0.7
	0-4	53	35.3	35.3	36
	5-6	45	30	30	66
	7-9	32	21.3	21.3	87.3
	10	19	12.7	12.7	100
	Total	150	100	100	
Do you think Stroke is related to obesity ?					
Valid	No	10	6.7	6.7	6.7
	I don't know	12	8	8	14.7
	yes	128	85.3	85.3	100
	Total	150	100	100	
Do you think the smoking is a risk factors of Stroke?					
Valid	No	12	8	8	8
	I don't know	12	8	8	16
	yes	126	84	84	100
	Total	150	100	100	
Do you think Fatty food related Stroke?					
Valid	No	16	10.7	10.7	10.7
	I don't know	21	14	14	24.7
	yes	113	75.3	75.3	100
	Total	150	100	100	
Do you think the hypertensive patient has high chance for Stroke?					
Valid	No	10	6.7	6.7	6.7
	I don't know	15	10	10	16.7
	yes	125	83.3	83.3	100
	Total	150	100	100	
Do you think the Diabetes patient has high chance Stroke?					
Valid	No	23	15.3	15.3	15.3
	I don't know	36	24	24	39.3
	yes	91	60.7	60.7	100
	Total	150	100	100	
Do you think face drop , difficulty speech and arm Weakness are maybe signs of Stroke ?					
Valid	No	14	9.3	9.4	9.4
	I don't know	22	14.7	14.8	24.2
	yes	113	75.3	75.8	100
	Total	149	99.3	100	
Missing	System	1	0.7		
Total		150	100		

Further analysis, a cross tabulation analysis was performed in order to determine the counts for combinations of :

A. Age, Education stage and Knowledge score with Gender (**Table 3**)
B. Study questionnaires outcome with Gender (**Table 4**)

Table 3: Participants' age, education stage and knowledge score cross tabulated by gender

Age					
Gender	16-21 years	22-28 years	29-35 years	> 35years	Total
Male	5	16	11	11	43
Female	15	33	41	18	107
Total	20	49	52	29	150
Education stage					
Gender	Middle School	High School	College	Graduated	Total
Male	0	19	18	6	43
Female	5	29	37	36	107
Total	5	48	55	42	150
How will you evaluate your knowledge about Stroke?					
Gender	0-4	6-May	9-Jul	10	Total
Male	17	13	8	5	43
Female	38	32	23	14	107
	55	45	31	19	150

Table 4: outcome of the Stroke awareness assessment questionnaires cross tabulated by gender

Gender	**No**	**I don't know**	**Yes**	**Total**
Do you think Stroke is related to obesity ?				
Male	2	2	39	43
Female	8	10	89	107
Total	10	12	128	150
Do you think the smoking is a risk factors of Stroke?				
Male	3	3	37	43
Female	9	9	89	107
Total	12	12	126	150
Do you think Fatty food related Stroke?				
Male	2	5	36	43
Female	14	16	77	107
Total	16	21	113	150
Do you think the hypertensive patient has high chance for Stroke?				
Male	3	5	35	43
Female	7	10	90	107
Total	10	15	125	150
Do you think the Diabetes patient has high chance Stroke?				
Male	3	10	30	43
Female	20	26	61	107
Total	23	36	91	150
Do you think face drop , difficulty speech and arm Weakness maybe signs of Stroke ?				
Male	6	7	30	43
Female	8	15	83	106
Total	14	22	113	149

Table 4 summarized the data outcome following the analysis of the Stroke awareness assessment questionnaires per gender. The below results were observed:

Out of 150 participants:

- 89 females & 39 males recognized that obesity is associated with stroke
- 89 females & 37 males recognized that smoking is a risk factors for Stroke
- 77 females & 36 males correlated Fatty food with the potential incidence of Stroke.
- 90 females & 36 males suggested an association of hypertension with Stroke.
- Overall, an average of 13% of participants declared no knowledge across all questions by choosing the "I don't know" answer.

DISCUSSION

In our study, we targeted young Saudi adults population with different gender, educational stages and background and age groups to cover a range from 16 years old to 35 and above 81% of the sample size were under the age of 35 years old.

In light of the current data, our study revealed that the majority of participants were able to relate stroke to the correct underlying risk factors particularly obesity and smoking which score 85.3% and 84.0% respectively.

Likewise, 75% agreed that fatty food is a contributing risk factor for stroke while only 61% thought that diabetic patients are at a higher chance for developing stroke.

As for the signs of cerebral stroke, the majority of participants had basic knowledge on the signs and symptoms of stroke such as hypertension (83%), face drop , difficulty speech and arm Weakness(76%).

In contract, **Karman *et al.*** [6] carried out a cross-sectional community-based survey in 2007 covering urban and semi-urban areas, of the Gulf Cooperation Council countries, and observed a very poor awareness level of stroke in the gulf area concluded that the majority of the patients enrolled had not even heard the term stroke (only 29.0% of 3,750 participants were familiar with the term 'stroke'). Moreover, stroke knowledge was poorest among the groups that were at the highest risk for stroke. Similarly, a study [7] published later in 2014 enrolling 2862 residents in Riyadh suggested an alarming deficit in the level of stroke awareness in the Saudi population. Urgent public health measures to correct this deficiency are promptly needed.

However, in our study an average of 13% of participants declared no knowledge across all questions by choosing the "I don't know" answer which still indicates a knowledge gap that needs to be addressed and efficiently bridged.

CONCLUSION

Our study revealed that it is still insufficient knowledge of brain stroke among the study group of young Saudi females and males adults regardless to the age group since the majority of participants were able to correlate stroke with the key predisposing risk factors as well as the signs of stroke. This indicates that proper intervention was in place to spread the awareness of this crucial medical emergency. However, this effort needs to continue to further improve knowledge about stroke, risk reduction, and appropriate stroke response and prevention. Nevertheless, further studies should be conducted on a larger scale to make a definite conclusion on the regression of stroke awareness in young adults population in Saudi Arabia.

REFERENCES

1. **Kaul S (2002):** Issue on stroke – Indian scenario. Neurol India, 50:91.
2. **Dalal PM (2002):** Stroke in India. Issue in primary and secondary prevention. Neurol India, 50:2–3.
3. **Yoon SS, Heller RF, Levi C *et al.* (2001):** Knowledge of stroke risk factors, warning symptoms and treatment among an Australian urban population**.** Stroke,32:1926–1930.
4. **Mackay J, Mensah GA (2013**): The atlas of heart disease and stroke. World health organization and Center for disease control and prevention. Available from: http://www.who.int/cardiovascular_diseases/resources/atlas/en .
5. **Al-Jadid MS, Robert AA (2010):** Determinants of length of stay in an inpatient stroke rehabilitation unit in Saudi Arabia. Saudi Med J., 31(2):189–92.
6. **Kamran S, Bener AB, Deleu D, Khoja W, Jumma M, Al Shubali A, Inshashi J, Sharouqi I, Al Khabouri J (2007):** The level of awareness of stroke risk factors and symptoms in the Gulf Cooperation Council countries: Gulf Cooperation Council stroke awareness study. Neuroepidemiology, 29(3-4):235-42.
7. **Alaqeel A, AlAmmari A, AlSyefi N, Al-Hussain F, Mohammad Y (2014):** Stroke awareness in the Saudi community living in Riyadh: prompt public health measures must be implemented. Journal of Stroke and Cerebrovascular Diseases, 23(3):500-4.