

## Knowledge, Attitude and Practice towards Stroke Risk Factors and Warning Symptoms in Saudi Arabia, 2017

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### ABSTRACT

**Background:** stroke is a neurological defect that could result in death thus adequate knowledge of stroke is a must for correct treatment and prevention of stroke consequences and disability.

**Objectives:** assessing the knowledge, attitude and practice (KAP) of Saudi population toward stroke risk factors and warning symptoms in Kingdom of Saudi Arabia (KSA).

**Methods:** 2021 adult Saudi subjects were enrolled in the study who were chosen from different parts of KSA. This cross sectional study was conducted using a structured questionnaire designed to examine KAP of participants about stroke risk factors.

**Results:** most of subjects were 41-50 years old, females, employed and had a college degree. About 9% of the participated subjects were suffering from stroke while, 28% had relatives who suffered from stroke. The majority of subjects had insufficient knowledge regarding the risk factors and warning symptoms of stroke thus, resulting in inadequate KAP in 63.8% of the respondents while only 36.2% had good KAP. The good KAP was significantly associated with younger age participants and highly educated.

**Conclusion:** The level of KAP toward stroke risk factors and warning symptoms was inadequate among the majority of participants. Good KAP was associated with high educational degree and young age.

**Keywords:** KAP, Stroke, Cross-Sectional, Risk Factors, warning symptoms, KSA.

### INTRODUCTION

Stroke is a worldwide health disease that result in high morbidity and disability rates. Two types of stroke were identified, ischemic and hemorrhagic types<sup>(1)</sup>. The risk factors of stroke are age, positive family history, chronic conditions including diabetes and hypertension and heart diseases. Alcohol consumption and smoking are also most common risk factors for stroke<sup>(2,3)</sup>.

According to the severity of stroke, it can result in different effects on mood, functional abilities, cognitive function and quality of life<sup>(4)</sup>. Also, it imposes a great burden on caregiver, national and individual economic stress<sup>(5)</sup>.

The treatment of stroke in acute type could reverse the paralysis in most of patients<sup>(6,7)</sup> but thrombolytic therapies could be useful during the first four hours of signs<sup>(8)</sup>. Due to the fact that most of patients arrive late after the golden hours for using therapies thus using preventive measures and modifying lifestyle are the most effective type of management of stroke<sup>(9,10)</sup>.

Adequate general knowledge about stroke could result in a quick and correct identification of stroke thus good management within the estimated

time<sup>(11)</sup>. This study was assessed to evaluate the knowledge, attitudes, and practices (KAP) of adult Saudi subjects regarding risk factors, warning symptoms for stroke that intended to develop strategies for controlling the stroke risk factors.

### METHODS

#### *Study design*

A cross sectional study was conducted during the period from January to April 2017 in KSA after obtaining an approval from the ethical committee of faculty of medicine and a written informed consent from all participants included in the study.

#### *Sample size and population*

A representative sample of Saudi adult population was selected by multistage clustered random sampling technique. The inclusion criteria were adult Saudi population aged from 20 to 50 years old then were asked to fill up a questionnaire and after collecting the data from participants and exclusion of questionnaires with incomplete data thus 2021 subjects were included in the study from different parts of KSA.

#### *Study tools:*

A self-administrated questionnaire was used for evaluating the KAP of participants regarding stroke.

The questionnaire was collected from different studies revised by experts and translated into Arabic. All subjects were interviewed and asked to fill up the questionnaire and were informed that the study had no expenses on them and that the safety of their data will be assured. The questionnaire involved 4 parts as the first part deals with subjects' demographics, the second part comprised questions about the knowledge of stroke risk factors as well as warning symptoms and the third part was addressed toward, the third and fourth parts regarding the attitude and practice of included subjects.

**Statistical analysis**

The data from the included questionnaires were analysed using Statistical Package for Social Science (SPSS) program (V. 22) then tabulated. P values < 0.05 were considered statistically significant.

**RESULTS**

**Demographic Characteristics:**

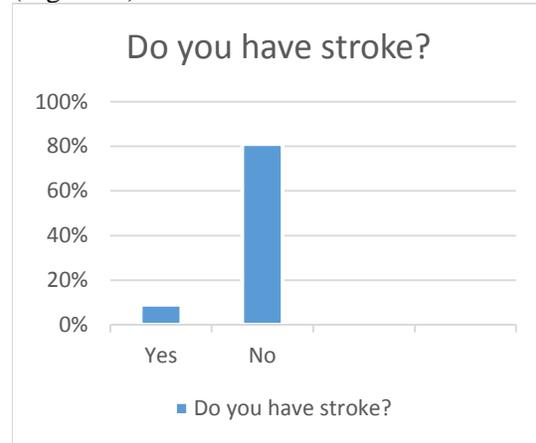
Table. 1 shows the demographics of participants. Most of subjects (52.4%) aged from 41to 50 years old, 27.7% were 31-40 years old and 19.9% were 20-30 years old. About 56% of the participants were females and 44% were males. Most of the included subjects were working (61%) and 39% were unempolyed. 63.9% of the subjects had a college degree, 16.1% had high school and 20% were illiterate.

**Table (1): Demographic Characteristics of included subjects (n=2021)**

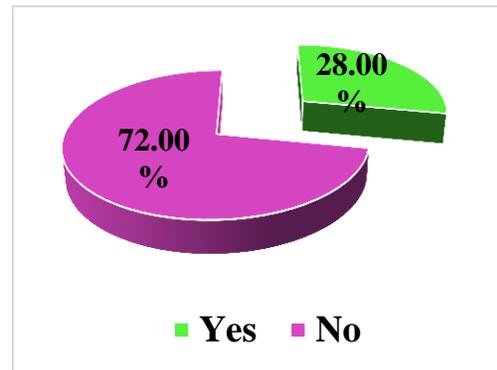
Age (year)	Frequency	Percentage (%)
20-30	403	19.9
31-40	560	27.7
41-50	1058	52.4
<b>Gender</b>		
Female	1132	56
Male	889	44
<b>Occupation</b>		
Working	1233	61
Unemployed	788	39
<b>Education level</b>		
Illiterate	404	20
High school	326	16.1
College degree	1291	63.9

**Incidence of stroke:**

As for the incidence of stroke, 9% of subjects suffered from stroke and 81% of participants seemed to be free from stroke (Figure. 1). Also, 28% of participants have relatives who suffered from stroke and 72% answered that they have no relatives suffered from stroke before (Figure. 2).



**Figure. 1: Prevalence of stroke in included subjects.**



**Figure. 2: subject's respond to the question "Do you have a family member suffered from stroke?"**

**Knowledge of the included subjects**

Table. 2 & 3 indicated the knowledge of the participants about the risk factors of stroke and warning symptoms. Most of the subjects had adequate knowledge about stoke as a disease of brain (89%). Also, 56.2% have sufficient knowledges about the sudden death from stroke. Most of the subjects thought that stroke is untreatable disease (77%). On the other hand, the majority of the participants underestimated the risk factors of stroke including hypertension, smoking,

alcohol consumption, ischemic heart disease, arterial fibrillation and vascular rupture. 73.7% declared that males have higher incidence of stroke. More than half of the participants (53%) had good

knowledge about the risk of high cholesterol and obesity on stroke (Table. 2). As shown in table. 3, the majority of subjects had insufficient knowledge about all the warning signs of stroke.

**Table. (2): Awareness of the included subjects about stroke and its risk factors (n=2021)**

Key risk factors	Yes	No
Stroke is a cerebral disease?	1798(89%)	223 (11%)
Stroke could result in sudden death?	1135(56.2%)	886 (43.2%)
Stroke could be treated?	464 (23%)	1557 (77%)
Hypertension and smoking are the most common risk factors for stroke?	540(26.7%)	1481(73.3%)
Alcohol consumption is a risk factor for stroke or not?	304 (15%)	1717 (85%)
Untreated diabetes is a common risk factor for stroke?	447 (22.1%)	1574 (77.9%)
Ischemic heart disease is a risk factor for stroke?	745 (36.9%)	1276 (63.1%)
Males have higher incidence of stroke than females?	1490 (73.7%)	531 (26.3%)
High cholesterol and obesity are risk factors for stroke?	1071 (53%)	950 (47%)
Arterial fibrillation and vascular rupture are risk factors for stroke?	863 (42.7%)	1158 (57.3%)

**Table. (3): Awareness of the included subjects about warning symptoms of stroke (n=2021)**

Symptoms and warning signs	Yes	No
Sudden confusion or trouble speaking?	600 (29.7%)	1421 (70.3%)
Numbness or weakness of face, arm, or leg?	1197 (59.2%)	824 (40.8%)
Sudden trouble seeing in one or both eyes?	437 (21.6%)	1584 (78.4%)
Sudden trouble walking, dizziness, or loss of balance?	1003 (49.6%)	1018 (50.4%)
Headache with no known cause?	213 (10.5%)	1808 (89.5%)

**Attitude of the included subjects:**

The attitude of the participants towards stroke is presented in table. 4. About half of the participants had positive attitude towards the treatment of stroke. However, 58.8% of the participants had insufficient attitude towards the prevention of stroke attack. Also, most of the participants (91.6%) thought that they will not die from the stroke invasion. On the other hand, 83.3% has good attitude towards advising people to control the risk factors of stroke before its occurrence.

**Table (4): Attitudes of respondents towards stroke (n=2021)**

Attitude of respondents towards stroke .		
Stroke can be treated?	No.	Percentage (%)
Yes	1018	50.4
No	1003	49.6
Stroke is a preventable disease?		
Yes	832	41.2
No	1189	58.8
Do you think you will die as a result of stroke?		
Yes	170	8.4
No	1851	91.6
Would you advise people to control the risk factors of stroke before its occurrence?		
Yes	1683	83.3
No	338	16.7

**Practice pattern of included subjects**

The practice pattern of participants was insufficient towards their action when remarking a patient just having the signs of sudden trouble in walking or seeing as 43.1% would advise the patient to take rest, 31.3% would call an ambulance or get the patient to hospital immediately and 25.6% will take time to allow spontaneous recovery. More than half of the participants (55%) would choose prevention as the best option for stroke. The most useful method for treatment of stroke was medication in 51%, physiotherapy for 14.3% and both types in 34.7% of participants (Table. 5).

**Table (5): Practice pattern of respondents towards stroke(n=890)**

<b>What would you do if you note a patient just having the signs of sudden trouble in walking or seeing?</b>	<b>No.</b>	<b>Percentage (%)</b>
<b>Advise him to take rest</b>	871	43.1
<b>Call an ambulance or get him to hospital immediately</b>	633	31.3
<b>Take time to allow spontaneous recovery</b>	517	25.6
<b>What is your best option for stroke?</b>		
<b>Treatment</b>	910	45
<b>Prevention</b>	1111	55
<b>Most useful methods for recovery are?</b>		
<b>Medication</b>	1031	51
<b>Physiotherapy</b>	290	14.3
<b>Both</b>	700	34.7

**Level of overall KAP of included subjects:**

The KAP was adequate in only 36.2% of the participants and insufficient in 63.8% of the participants (Table. 6).

**Table (6): Respondents' KAP of stroke**

<b>KAP level</b>	<b>Frequency</b>	<b>Percent (%)</b>
Poor	1289	63.8
Good	732	36.2
Total	2021	100,0

**Association between the level of KAP and demographics of the included participants:**

Table. 7 indicated that there was a positive correlation between good KAP and young ages as well as higher educational level. However, the gender showed no significant association with KAP.

**Table. 7: Association between KAP and socio-demographic variables**

	Good (n=732)		Poor (n=1289)		P-value
<b>Age</b>					
<b>20-30</b>	321	43.9%	82	6.3%	0.03
<b>31-40</b>	200	27.3%	360	28%	
<b>41-50</b>	211	28.8%	847	65.7%	
<b>Gender</b>					
Female	400	54.6%	732	56.8%	0.621
Male	332	45.4%	557	43.2%	
<b>Educational Level</b>					
<b>Illiterate</b>	38	5.2	366	28.4%	0.001
<b>High school</b>	51	7%	275	21.3%	
<b>College degree</b>	643	87.8%	648	50.3%	

## DISCUSSION AND CONCLUSION

The present study was conducted to evaluate the KAP of Saudi population toward stroke risk factors and warning symptoms. The knowledge of the participants about the stroke risk factors and warning symptoms were inadequate among the majority of respondents. Consistent studies conducted in KSA showed that there was a lack of knowledge about stroke definition, management, risk factors and warning symptoms<sup>(12-14)</sup>. Also, other worldwide studies showed that there was a gap in the available knowledge of stroke thus resulting in inadequate KAP level and increasing the morbidity and disabilities of the disease<sup>(15-17)</sup>.

Also, the attitude and practice regarding stroke are not the focus of the research of many studies but some studies conducted in different parts of the world showed that the majority of people will call the emergency for any patient with signs of stroke<sup>(18, 19)</sup> while other people will take the patient to hospital<sup>(20, 21)</sup>.

The present study showed a significant association between the KAP of the participants with young age and higher educational degree. Consistent studies showed that different ages groups were significantly associated with KAP in different countries as the younger age have shown better knowledge<sup>(22)</sup>. However, older age participants have shown higher level of

adequate knowledge due to higher incidence of stroke among old age participants<sup>(23-25)</sup>.

In accordance with our present study, a positive relation was found between high education and good knowledge<sup>(20, 26)</sup>.

Another contrast study on KSA showed that there were neither significant difference in knowledge nor attitude towards stroke among different age groups nor between different genders<sup>(12)</sup>.

In conclusion, the level of KAP toward stroke risk factors and warning symptoms was inadequate among the majority of participants. Good KAP was associated with high educational degree and young age.

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