Assessment of Warning Signs, Risk factors and Treatment Plans of Stroke Among General Population in Riyadh

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Abstract Background: Stroke is by far the most prevalent cause of death in the world, rendering it a serious health problem. With an astounding 6.5 million deaths attributed to it; it is a pertinent ecological threat. In Saudi Arabia, research has revealed an alarming increase in the number of deaths caused by stroke, with an approximate annual fatality rate of Saudi citizens. By 2030, the mortality rate caused by stroke is projected to increase twofold in Saudi Arabia. Methods: An array of structured inquiries that have been applied in knowledge, attitude and practice (KAP) probes carried out around the world were looked over. A questionnaire with questions with several options was underway. An ANOVA test with a sense of repeated measurements was executed. The threshold for statistical significance was impacted as a p-value of less than 0.05. Results: 19.61% of the participants were health care professionals, 29.41 % were IT and administrative professional, 41.18% were self-employed and 9.80% were unemployed. 76.47 % agreed with stroke as a brain disorder. 23.53% do not agreed with stroke as a brain disorder. KAP scores of IT professional were higher when compared to health care professional, self-employed and unemployed population [p= 0.018, mean square= 0.794]. No significant correlation between gender and KAP factor with p= 0.191.

Conclusion: KAP scores of male formulation were higher when compared to female population. KAP scores of IT professional were higher when compared to health care professional, self-employed and unemployed population. To bridge the gaps in knowledge, it is crucial to foster strong collaboration among experts from various fields such as cerebrovascular, cardiovascular and neurobiology disease.

Key Words young adult, risk factor, aging, health care personnel, age distribution, age factor, attitude to health, stroke, knowledge

1. Introduction
Many people refer to aneurysms as cerebral calamities and brain storms. When there is an impediment in the blood convey to the brain, acute health issues might occur [1], [2]. Brain cells commence to break down in an element of minutes. Stroke is the second predominant cause of death internationally, making it an acute medical condition. It accounts for a staggering 6.5 million fatalities, making it a major public health issue [3], [4]. On the other hand, most individuals who have experienced a stroke manage to survive the initial injury, but unfortunately, they are left with debilitating symptoms for the rest of their lives [5].

Stroke has emerged as a notable and escalating concern primarily as a result of poor dietary choices, insufficient exercise, unregulated urban development, and sedentary lifestyles prevalent in the western world, all of which contribute to various concurrent illnesses. The symptoms of stroke include
inarticulation, difficulties with movement, blindness, speech problems, despair, and cognitive decline [6], [7]. The victim’s standard of life therefore enormously diminishes, exerting an awful financial and mental strain on those who care for the patient family and protectors [8]. The outlay of medical care is particularly high during the initial phase after a stroke, and there is also a significant need for long-term assistance during the later stages [9]. Additionally, when considering both loss of life and disability, subsequent ischemic heart disease and perinatal imperfections, stroke is the third prevailing cause [10]. The burden of stroke is evident, with a substantial 143 million disability adjusted life years attributed to this condition [11].

In Saudi Arabia, research has revealed an alarming increase in the number of deaths caused by stroke, with an approximate annual fatality rate of Saudi citizens [12]. By 2030, the mortality rate caused by stroke is projected to increase twofold in Saudi Arabia [13]. These statistics suggest that stroke will impose a significant financial hardship on the country in the coming years. Previous experimental tryout in Saudi Arabia have identified hypertension and that stroke can manifest in individuals who are 65 years old and above, as well as in much younger age groups [14]. The risk factors associated with stroke include advancing age, heart disease, persistent ailments including diabetes and hypertension, and a favorable family history. More importantly, smoking and alcohol use are substantial warning signs for stroke. [15]. To accomplish to more effectively mitigate the effects of ischemic stroke on those affected, it is imperative to shorten the time lapse between the first signs of stroke symptoms and being admitted to hospital [16]. This improvement is necessary to ensure prompt and efficient treatment [17]. Lack of public being aware and empathy of the warning signs of stroke and the imperative for swift action is one of the primary root causes of procrastination in seeking medical attention for survivors of strokes [18]. Furthermore, denial of the disease and the belief that symptoms will resolve on their own also contribute to these delays. Social attitudes and knowledge, which include recognizing and addressing risk factors, are indispensable in mitigating aneurysms, as well as the obligation of both the community and individuals when stroke symptoms arise [19].

2. Material and Methods
   A. Research Plan
   An online poll of Saudi Arabian health experts from a range of industries was conducted. Enlistment of Research

   B. Participants
   Participants were sought out using a web-based poll that incorporated a self-reported questionnaire dispersed via an array of social media venues including Facebook, Instagram, and WhatsApp. Using the Google Forms service, an English version of the questionnaire originated and handed out via links around Riyadh. Convenient sampling was deployed to establish the participants.

   ![Figure 1: Young Adult, Risk Factor, Aging, Health Care Personnel, Age Distribution, Age Factor, Attitude to Health, Stroke, Knowledge.](image1)
   ![Figure 2: Occupation distribution of study participants. 19.61% of the participants were health care professionals, 29.41% were IT and administrative professional, 41.18% were self-employed and 9.80% were unemployed.](image2)

   C. Study Questionnaire
   A number of structured questionnaires that have been used in knowledge, attitude, and practice (KAP) investigations carried out globally were reviewed [9]. A questionnaire with multiple choice questions was then developed. There were four sections to the survey questionnaire. Demographic information such as age, gender, and occupation were included in the first section. The assessment of knowledge of stroke was the focus of the second section’s questions. The final section’s questions tested participants’ knowledge of stroke risk factors.

   D. Statistical Analysis
   The statistical information was recorded in Microsoft Excel 2021 and analysed using the SPSS Version 23. The categorical variables have been portrayed using the frequencies and percentages. An ANOVA test with repeated measurements was flee. A noteworthy p-value was impacted as one that was less than 0.05.

3. Results
4. Discussion
   This study endeavoured to gauge the general population’s knowledge, attitudes, and practices (KAP) on capturing in-
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Table 1: Shows no significant correlation between gender and KAP factor with p=0.191

Figure 3: Participants’ reactions to stroke warning signs. Smoking and hypertension were cited by 88.24% of participants as the two the main stream risk factors for stroke. 11.76% concurred that smoking and high blood pressure are the two the core precursors for stroke.

Figure 4: Response to stroke as brain disorder. 76.47 % agreed with stroke as a brain disorder. 23.53% do not agreed with stoke as a brain disorder.

Figure 5: Participants’ reactions to stroke warning signs. Smoking and hypertension were cited by 88.24% of participants as the two the main stream risk factors for stroke. 11.76% concurred that smoking and high blood pressure are the two the core precursors for stroke.

Figure 6: Response to stroke as brain disorder. 76.47 % agreed with stroke as a brain disorder. 23.53% do not agreed with stoke as a brain disorder.formation of stroke and its risk factors in Riyadh.

There is a dearth of publicly available data on the general public’s comprehension of stroke warning signs and clinical presentation. While some research has been done on the topic in question, a substantial number of studies have solely targeted at healthcare professionals [20]–[22]. The end goal of the aforementioned endeavour is to drastically improve the cognizant awareness of stroke on behalf of patients, healthcare providers, and individuals. Consequently, this will aid Saudi Arabia and other economies influence it. Moreover, health-care and educational facilities might use the research findings to create training programs that will enhance comprehension.

Table 2: No significant correlation between age group and KAP factor (P= 0.639)
of the clinical manifestation of a stroke.

In the present study, 54.90% were Male survey taker and 45.10% were Female survey taker. Occupation profile of the study participants includes. 19.61% of the participants were health care professionals, 29.41% were IT and administrative professional, 41.18% were self-employed and 9.80% were unemployed. Age distribution of study participants are as follows 15.69% of the participants were below 20 years, 64.71% were between 21-30 years, 7.84% were of the age group between 31-40 yrs. 11.76% were above 40 years. In this study, 76.47% agreed with stroke as a brain disorder. 23.53% do not agreed with stroke as a brain disorder. Consistent with earlier research by Samreen et al. [23] on Dhaka university students, it was discovered that 74.2% of the students correctly recognized stroke as a brain illness. Furthermore, recent American research found that just 50.1% of students identified stroke as a brain condition [24]. As such, participants in the present study accurately identified it as the brain’s blood supply stopping. Moreover, the study revealed disparities in the comprehension of specific features of stroke among the participants, underscoring the need for supplementary educational programs aimed at augmenting students’ knowledge of diverse chronic illnesses and their fundamental processes. Smoking and hypertension were cited by 88.24% of participants as the two main risk factors for stroke. 11.76% of them did.

On the other hand, 88.8% of male and 90.4% of female medical students in Saudi Arabia’s recent study by Mirghani et al. [25] noted hypertension as a risk factor for stroke. Consistent with our results, earlier research on the general population found hypertension to be the most common risk factor for stroke [26]. In addition, persistent stress has been identified as another possible risk factor for stroke by WebMD and the American Heart Association. Stress can result in hypertension, which puts continuous strain on the heart’s arteries. Excessive dilation of blood arteries weakens and destroys the arterial walls due to the increased force. Both primary forms of stroke are more likely to occur in people with high blood pressure, obesity, diabetes, elevated cholesterol, and advanced age. 84.31% agreed that unexpected difficulty walking, light-headedness, and lack of balance are signs of a stroke. 15.69%. According to other research, there are a variety of indications and symptoms associated with stroke. These include feeling weak or numb, having trouble understanding words, having trouble speaking or seeing, having trouble walking, and getting headaches. These signs are essential for determining whether a stroke has occurred [27]. The participants’ understanding of stroke symptoms and risk factors was mediocre at best. But several studies carried out in the Kingdom of Saudi Arabia (KSA) have repeatedly shown that there is a serious lack of knowledge about the definition, treatment, risk factors, and warning signs of stroke [28]. Global research has also revealed a clear information vacuum about stroke, which contributes to low knowledge, attitudes, and practices (KAP) and an increase in the morbidity and disability linked to

Figure 7: Variability in response of participants of different sectors when asked about their what would they do when they encounter someone showing symptoms of stroke. IQR of health care professionals is 1%. For self-employed and IT professional IOR = 3%. Median of response among participants is 2.5.

Figure 8: Difference in KAP scores among gender. KAP scores of male formulation were higher when compared to female [p= 0.407 and mean square= 0.207].

Figure 9: Difference in KAP scores among participants from different occupation sectors. KAP scores of IT professional were higher when compared to health care professional, self-employed and unemployed population [p= 0.018 and mean square= 0.794].
this illness [29]. Male formulations had higher KAP ratings than female formulations [p=0.407, mean square= 0.207]. An independent investigation was out on the Kingdom of Saudi Arabia demonstrated that there was no significant difference in knowledge or attitudes regarding stroke between age groups or genders [30].

Overall, this study’s findings indicate that the questioned populace knew very little about stroke. This result is in line with comparable research that has been carried out in other nations throughout the globe. As a result, the population’s varying knowledge levels. The questionnaire was developed based on an earlier study and was first tested in a similar setting. Following that, necessary modifications were put into place to alleviate any difficulties that arose throughout the data collection procedure.

A. Challenges of study
KAP inquiry rely heavily on data provided by respondents, which is at risk of bias and error. Moreover, the restricted sample size might lend it challenging to extrapolate the results to a broader in scope population. While comprehending knowledge and attitudes is the key objective of KAP inquiries, they might not always reveal a glimpse into the true roots of specific actions. Like virtually every cross-sectional research design, KAP studies are frequently observational and do not solely point out cause and effect; merely the exposure and ensuing are presented in tandem in this specific look. Thus, it is unfeasible to prove an association between cause and effect only via the use of this study theory.

5. Conclusion
In comparison to the female population, the KAP ratings of male formulation were found greater. IT professionals had higher KAP scores than the population of self-employed individuals, health care professionals, and jobless people. Fostering robust collaboration among experts from many domains, such as neurobiology, cerebrovascular and cardiovascular illness, is vital to closing the knowledge gaps.

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Conflict of interest
The author declared that no conflict of interest.

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