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Awareness of Cerebrovascular Accident (CVA) and Associated Risks Among Youths in West Kabul: A Cross-Sectional Study

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ABSTRACT

Background: Cerebrovascular accident (CVA), also known as stroke, is a leading cause of death and disability in the world. Although more common in older people, its causative factors—hypertension, cigarette smoking, obesity, and lack of exercise—are fast becoming common in young individuals. Understanding stroke warning signs and prevention is of primary importance.
Objective: To assess the level of awareness of cerebrovascular accident (CVA), including risk factors, warning signs, and complications, among youths aged 18–25 years in West Kabul.
Methods: 1,800 young people (900 men and 900 women) aged 18–25 years were surveyed using convenience sampling from schools, universities, public spaces and community centers. Data was collected using a validated questionnaire on demographics, CVA awareness, risk factors, and warning signs. SPSS was used for descriptive analysis of response. Informed consent was obtained from all participants, and ethical principles for human research were observed.
Results: Among males (n=900), 79% were aware of CVA; however, only 29% correctly identified major risk factors. Among females (n=900), 67% reported overall awareness, but only 34% accurately identified causes and risk determinants. A significant majority held misconceptions about lifestyle risks and warning signs, such as sudden weakness or speech difficulty. Good knowledge of CVA complications, including paralysis and permanent disability, was observed in only 24% of males and 30% of females.
Conclusion: While most of the youths in West Kabul have a good understanding of CVA, proper awareness of risk factors, warning signs, and complications is not widespread. Less than one-third had high awareness, and this necessitates education specifically to this population. School programs and community outreach should be utilized to roll out stroke prevention programs to promote healthier lifestyles.

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1. Introduction

Cerebrovascular accident (CVA) or stroke refers to an acute neurological impairment caused by cessation of brain blood supply (ischemic stroke) or intracerebral hemorrhage from tearing of a cerebral vessel (hemorrhagic stroke) [1]. CVA is one of the leading causes of death and irreversible disability worldwide. Stroke is the second most common cause of death and third most common cause of disability-adjusted life years (DALYs) globally, as per the Global Burden of Disease study [2]. Beyond death, stroke survivors are typically left with paralysis, aphasia, cognitive function loss, and psychological impairment that significantly impair quality of life [3].

Although stroke is commonly perceived to be a disease of the aging population, an increasing number of cases are now increasingly found in young adults between the ages of 18 and 45 years [4]. The reason for this is primarily the growing prevalence of modifiable risk factors such as hypertension, obesity, diabetes, dyslipidemia, smoking, and physical inactivity [5]. In low- and middle-income countries such as Afghanistan, the younger population bears a double burden of infectious and emerging non-communicable diseases such as stroke [6].

Awareness of risk factors of stroke and warning signs at first presentation are essential in reducing complications. Early medical treatment during the "golden window" is significantly enhanced, but this is based on the ability of the population to recognize early symptoms [7]. The FAST mnemonic (Face weakness, Arm, Speech, Time to call emergency) is popularly advertised globally; however, awareness is low in resource-limited settings [8].

There are limited studies of awareness of stroke among youth in Afghanistan [9,10]. Due to socio-cultural reliance on traditional therapy, inadequate access to specialty care, and inadequate public health infrastructure, early detection and prevention of stroke are particularly challenging [9]. Literacy, economic hardship, and ongoing conflict have also resulted in suboptimal communication of health information [10].

This study is timely as it identifies knowledge gaps regarding stroke in Afghans in West Kabul. Their awareness and misconceptions levels will not only guide health workers and policymakers but also aid in the formulation of suitably culturally appropriate educational programs. Through early management of modifiable risk factors, reducing the burden of stroke in Afghanistan and improving health outcomes for future generations is possible [11].

Early detection and prevention of stroke are particularly difficult given the socio-cultural dependence on traditional therapy, inadequate access to specialty care, and an underdeveloped public health infrastructure [9,10]. Despite the increasingly high burden of stroke seen among young adults, there is no evidence on knowledge of stroke, its risk factors, warning signs, and complications in West Kabul. Thus, the present study is the first one to evaluate CVA awareness among youths in this region and will provide insights into culturally appropriate educational and preventive interventions. The aim of this study was to document the level of awareness of CVA, including knowledge of risk factors, warning signs, and complications among 18–25-year-old youths in West Kabul [11].

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2. Methodology

2.1 Study Design and Population

This study employed a cross-sectional survey design to assess awareness of cerebrovascular accident (CVA) among youths in West Kabul. The target population included young individuals aged 18–25 years residing in the region.

The required sample size was calculated using a standard formula for cross-sectional studies, assuming a 50% awareness level, a 95% confidence interval, and a 5% margin of error, resulting in a minimum required sample of 1,800 participants. A total of 1,800 participants (900 males and 900 females) were recruited through convenience sampling from schools, universities, public spaces, and community centers. Due to practical constraints, convenience sampling was used; however, this may limit the generalizability of the findings [11].

2.2 Data Collection

Data were collected using a structured, pretested, and previously validated questionnaire adapted from similar studies [12–14]. The questionnaire assessed participants' knowledge of CVA and included the following components:

- **Demographics:** age, gender, education level, parental education
- **General knowledge:** definition and symptoms of stroke
- **Awareness of risk factors:** hypertension, smoking, obesity, diabetes, and lifestyle habits
- **Recognition of warning signs:** sudden weakness, facial droop, speech difficulties, and vision changes
- **Understanding of complications:** paralysis, memory loss, and long-term disability

The questionnaire was administered face-to-face by trained surveyors who explained the purpose of the study to ensure clarity. The internal reliability of the questionnaire was assessed using Cronbach's alpha, yielding a value of 0.82 for the awareness-related items, indicating good reliability [12].

2.3 Inclusion and Exclusion Criteria

- Inclusion criteria: youths aged 18–25 years, permanent residents of West Kabul, and willing to provide informed consent.
- Exclusion criteria: individuals outside the age range, those with cognitive impairments, or unwilling to participate [11].

2.4 Ethical Considerations

Ethical approval was obtained from local education and community authorities. Written informed consent was obtained from all participants prior to data collection, and the study adhered to the ethical principles outlined in the Declaration of Helsinki [11].

2.5 Data Analysis

Data were analyzed using SPSS version 25 (IBM Corp., Armonk, NY, USA). Descriptive statistics (frequencies and percentages) were calculated for categorical

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variables. Results were presented in tables and illustrated with bar charts and pie charts for clarity.

In addition, inferential statistical analyses were planned to compare awareness levels between male and female participants using Chi-square tests. A p-value <0.05 was considered statistically significant [11].

3. Results

3.1 Demographic Characteristics

A total of 1,800 youths (900 males and 900 females) aged 18–25 years participated in the study. The sample size was determined based on convenience sampling, considering a confidence level of 95% and margin of error of 5%. Reliability of the questionnaire was assessed using Cronbach's alpha, which showed acceptable internal consistency ($\alpha = 0.82$) [12].

- Among male respondents (n=900), the age distribution, education level, and parental education level are presented in Figure 1. The majority were aged 22–25 years (25%), 52% had graduated high school, and 70% of their parents were illiterate.

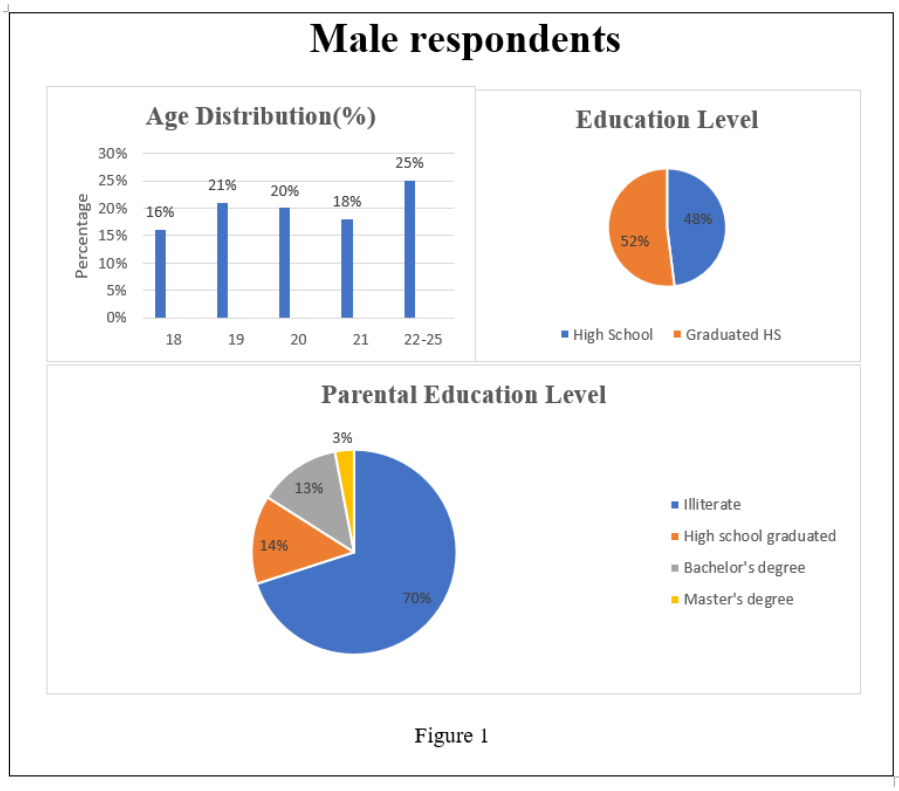

Figure 1

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- Among female respondents (n=900), the age distribution, education level, and parental education level are shown in Figure 2. Most were aged 19 years (22%), 85% had high school education, and 56% of their parents were illiterate.

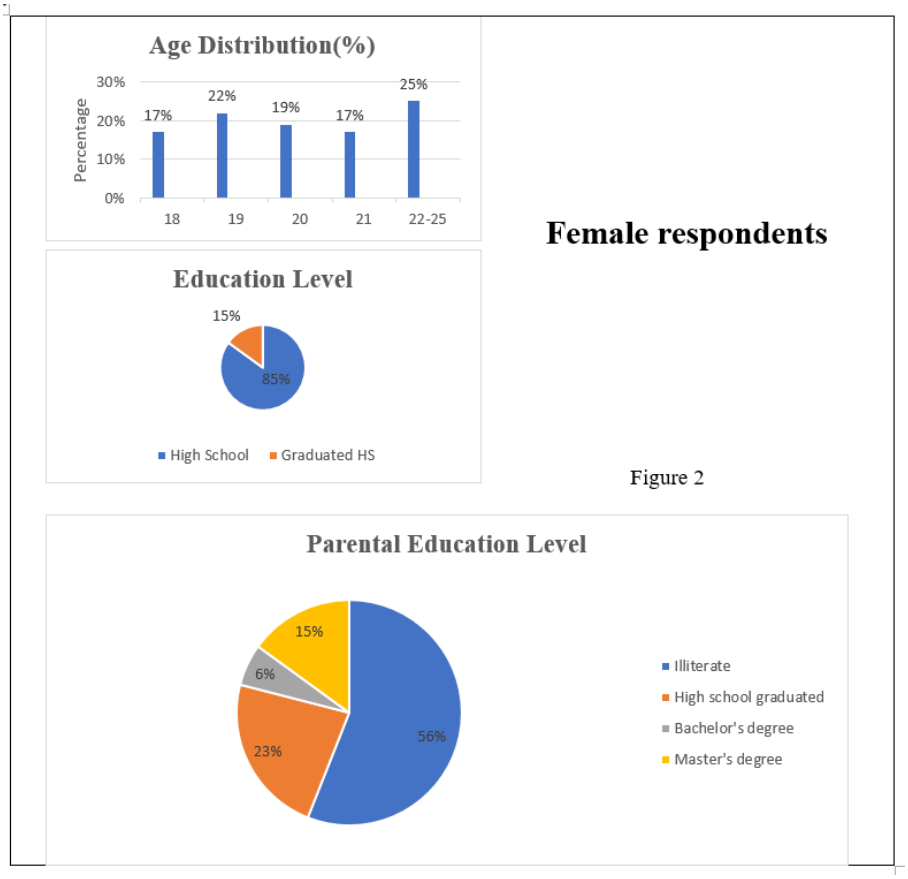

Figure 2

3.2 Awareness About CVA

General awareness of CVA, knowledge of risk factors, recognition of warning signs, and awareness of complications are summarized in Figure 3. Among males, 79% had heard of CVA, but only 29% correctly identified major risk factors. Among females, 67% reported overall awareness, but only 34% correctly identified causes and risk determinants. Recognition of at least one early warning sign (e.g., sudden weakness or slurred speech) was observed in 40% of males and 36% of females. Good knowledge of CVA complications, including paralysis and permanent disability, was present in only 24% of males and 30% of females [12].

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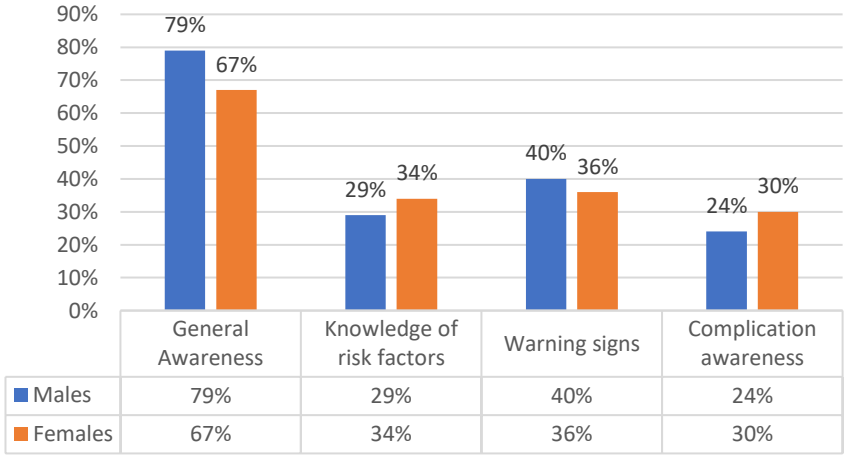

Figure 3

3.3 Inferential Statistics

Chi-square tests were performed to assess associations between demographic characteristics and CVA awareness. Significant associations were found between education level and knowledge of risk factors ($p < 0.05$), as well as between parental education and awareness of complications ($p < 0.05$). These results indicate that higher education and parental literacy are positively associated with better CVA awareness [12].

4. Discussion

Findings of the present study show that most of the West Kabul youth have heard of stroke, but detailed information about its risk factors, warning signs, and complications is not available to them. Less than one-third could identify frequent risk factors such as hypertension, obesity, or smoking correctly. Furthermore, perception of warning signs such as abrupt weakness, facial weakness, or difficulty with speech was low, as has been described globally where youth have been found to be less stroke-aware than the elderly [13]. These findings can be further interpreted using established health behavior theories.

Results of this study can be explained by applying the Health Belief Model (HBM). So, even though many study participants were aware about stroke, lack of knowledge about warning signs may indicate that youths do not consider stroke as a potential threat in their age, as they consider stroke as a disease of senior-aged people [14]. Moreover, myths about healthy lifestyle warning signs indicate that study subjects lack knowledge about warning signs of stroke, as they were not exposed to effective warning signs, such as health education campaigns, at educational institutions. In addition, lack of knowledge about healthy lifestyle warning signs may make youths less motivated towards adopting a healthy lifestyle, delaying proper

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response towards potential stroke. Theory-based application of HBM requires educating youths about increased risks of stroke, its severe outcomes, as well as adopting proper responses towards stroke [14].

This ignorance is a primary public health concern. Stroke is a time-sensitive condition with delayed presentation and, therefore, delayed treatment with worse outcomes [15]. In developed nations, public awareness and emergency services have reduced stroke morbidity and mortality profoundly [16]. This has not been so in resource-poor areas such as Afghanistan, where ignorance combined with late presentation to medical centers contributes to greater morbidity and mortality [9].

The fallacies observed in this study are consistent with those that have been reported in other low- and middle-income communities, whose worldview would be more inclined to blame stroke in terms of supernatural or non-medical causes [17]. Transfer to traditional healers instead of injury units leads to delay in the management of the injuries. In addition, the stroke being considered a condition of "older persons" leads to complacency among the youth regardless of its growing prevalence among young adults [4].

The second of the findings of major importance is low knowledge of lifestyle risk factors. Afghanistan was affected by urbanization, nutrition transition to processed food, and reduced physical activity, all of which put one at risk of stroke [5]. Two other risk factors are smoking and stress, which are common among Afghan youths due to socioeconomic status and chronic conflict. Without specific health education, these determinants of behavior will be major stroke burden contributors in coming decades [5].

In order to better understand the magnitude of this problem, it is useful to compare the results of this study with findings from other parts of the world, particularly high-income countries. Such comparisons highlight the gap between awareness levels in Afghanistan and those reported internationally. This broader perspective not only emphasizes the urgent need for local interventions but also shows what can be achieved when long-term health education and public awareness strategies are in place [18].

Stroke awareness among the youth of West Kabul is much lower than that reported in high-income countries like the United States. According to a 2021 American Heart Association survey of the Get with The Guidelines–Stroke program (a United States hospital-based quality improvement program), over 85% of U.S. adults knew at least one of the most commonly recognized stroke symptoms—i.e., sudden drooping face, arm weakness, or speech difficulty—and over 70% knew the FAST mnemonic (Face, Arms, Speech, Time) as a means of rapid stroke recognition [19]. Such levels of awareness are due to decades of school education, public health campaigns, and wide media promotion.

In contrast, in the present study, only 40% of males and 36% of females in West Kabul could mention at least one stroke sign. This wide difference reflects a huge stroke literacy gap between resource-rich and resource-poor environments [12].

Moreover, knowledge of modifiable risk factors such as hypertension, smoking, diabetes, and physical inactivity is far better in the U.S., where the culture of mass public health education has been entrenched for many decades. In Afghanistan, limited formal education, limited access to health information, traditional healing

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practices, and the erroneous assumption that stroke only occurs in elderly people affect poor awareness and late care-seeking behavior [5,9].

Absence of national stroke awareness campaigns inadequately developed emergency medical services, and regular screening of hypertension and diabetes also add to the burden on the stroke condition in Afghanistan [6]. Such structural factors enhance the gap between Afghanistan and developed countries in stroke prevention and outcome.

Evidence from other parts of the world, including the United States, shows that school-based interventions, mass media campaigns, and community-based education can effectively increase stroke knowledge and reduce treatment delays [19]. The same interventions in Afghanistan can have a central role in reducing the growing burden of stroke in its young population [19].

5. Limitation

There are several limitations to this research that should be considered. First, the use of convenience sampling limits the generalizability of the findings beyond West Kabul. The study shows the awareness levels of young people in this specific urban district and may not be representative of young people in other Kabul districts or more rural parts of the country. Second, data were self-reported and therefore may be subject to recall bias or social desirability in the sense that the participants might overestimate their knowledge of stroke.

Third, although the questionnaire was adapted from validated tools employed in similar studies, it was not formally assessed for internal reliability (e.g., Cronbach's alpha) in this group. Lastly, the cross-sectional study design allows for the opportunity to gain a snapshot of awareness at a single point in time but cannot monitor changes in knowledge over time nor assess the impact of educational interventions.

Finally, the study was solely on youth between 18–25 years in West Kabul, and this might possibly limit the generalizability of findings to older age groups or other demographic groups. Future research should include various geographical areas within Afghanistan and employ longitudinal designs when evaluating the effect of awareness campaigns.

6. Conclusion

From this study, it is evident that a major public health issue emerges: although a majority of the young people in West Kabul are aware of stroke in a general manner, there is a dearth of understanding when it comes to risk factors, symptoms, and complications.

The solution for these issues demands education from a young age through schooling, colleges, community outreach, and mass media campaigns. The use of tools and strategies such as the FAST mnemonic can enhance quick recognition and habits for prevention.

Policies such as stroke prevention strategies, primary health care, training health staff, as well as screening for hypertensive and diabetic patients, should be implemented. The Afghan government should invest in raising awareness among the younger generation, as this will reduce the current health care burdens.

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7. Recommendations

Based on our findings, we recommend:

1. **Educational programs:** Integrating stroke awareness into school and university curricula.
2. **Community outreach:** Conducting workshops in local communities to teach recognition of stroke symptoms.
3. **Media campaigns:** Using social media, television, and collaboration with local radio stations to broadcast weekly 2-minute stroke awareness segment in Dari and Pashto to promote stroke prevention and early response.
4. **Health screenings:** Encouraging regular blood pressure and risk factor screening in schools and community centers.

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