Assessing the Efficacy of an Educational Video on Stroke Knowledge in Lebanon: A Study with an Interventional Approach

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Abstract

Objective

This study aimed to assess the public's knowledge of stroke before and after viewing an educational video about stroke risk factors, preventive measures, and alarming signs.

Methods

A population-based interventional study was conducted in Lebanon using a 3-minute video-based education about stroke. A pre- and post-structured questionnaire compared the level of knowledge about stroke.

Results

The study included 685 participants. Knowledge of stroke, risk factors, warning signs, treatment, and preventive measures significantly increased post-educational video sessions. A higher baseline knowledge score was associated with a family history of stroke (Beta = 1.76) and being a healthcare professional (Beta = 3.35). Participants between 25 and 34 years (Beta=-1.39) and those with a high risk of stroke (Beta=-1.03) were significantly associated with a lower knowledge score.

Conclusion

This study demonstrated the effectiveness of a video-based educational tool to raise awareness about stroke. Short, targeted audio-visual resources using lay language can convey health education messages and influence behavioral changes. The community can benefit from a large-scale educational campaign that targets different socio-economic statuses to enhance knowledge of stroke and save lives.

INTRODUCTION

A stroke is a medical emergency that requires urgent and specialized care [1]. Early recognition of stroke warning signs and prompt access to care is critical for improving patient outcomes and reducing the risk of disability and death [2]. Studies showed that the public knowledge of stroke is limited [3] and highlighted the importance of education programs for disease and complications avoidance [4]. Educational campaigns must target individuals, families, and communities to reduce stroke morbidity and mortality [5]. Educational material should focus on enhancing public awareness and knowledge of stroke signs and symptoms, encouraging individuals to take quick action, avoiding risk factors, and taking preventive strategies [6–8]. Educational strategies can be health campaigns, community outreach programs, and educational resources, including brochures, videos, and seminars [9]. Literature research showed that educational intervention improved stroke knowledge and awareness among at-risk patients and their family members [10].

Relevant international societies made efforts to address this gap. For example, the American Heart Association/American Stroke Association (AHA/ASA) implemented a community-based stroke education program using interactive sessions covering the disease risk factors, warning signs, and the importance of seeking timely medical attention [11]. Data shows that in low- and middle-income countries (LMICs), the burden of stroke is still

increasing [12]. In Lebanon, stroke is the second leading cause of death in Lebanon, ranging between 14.1–22% [13]. Despite the detrimental impact of stroke, knowledge and awareness about this disease remain limited [14, 15]. Therefore, this study aimed to assess the impact of an educational video intervention and identify predictors that may contribute to variations in knowledge and awareness outcomes by conducting a comparative analysis of knowledge and awareness levels among participants before and after the implementation of the intervention.

METHODS

Study design

A population-based cross-sectional study was conducted between July 01, 2022, and September 30, 2022, to comprehensively evaluate the impact and factors influencing an educational video intervention.

Participants

Eligible participants were adults aged 25 years and older residing in Lebanon. They were categorized into distinct 10-year age groups, 25–34, 35–44, 45–54, and 55 and above. The rationale was to (1) evaluate their knowledge about stroke, (2) educate them about the alarming signs and symptoms, (3) enhance their awareness about the importance of thinking fast and acting fast to save a life, and (4) implement healthy habits for disease prevention. The threshold of 25 years was chosen because individuals between the ages of 18 and 25 are considered emerging adults [16] who are unlikely to be interested in chronic diseases.

Procedure

Data were collected through an anonymous online questionnaire created on Google Forms, a cloud-based survey powered by Google™. The online survey included a 3-minute educational video titled “Think Fast, Act Fast to Save a Life” embedded after the pre-test knowledge survey and before the post-knowledge section. Both the questionnaire and the educational video were compatible with the American Stroke Association online awareness materials and were translated into Arabic, the native language of Lebanon and other countries in the region, according to the World Health Organization’s translational guidelines (https://terrance.who.int/mediacentre/data/WHODAS/Guidelines/WHODAS%202.0%20Translation%20guidelines.pdf A forward translation was first performed from English into Arabic, and then the translated version was back-translated into English. The two English versions were compared, with minor discrepancies corrected by consensus between the translators and the authors. Thus, the questionnaire was available in both languages and was electronically distributed via social media platforms, e.g., WhatsApp, Instagram, Twitter, and Facebook (https://forms.gle/Xr3U45Wwuee9imB36).

Before administration, the questionnaire was pilot-tested with a sample of 20 individuals to identify any potential ambiguities. Further validation involved content review by experts, including one of the authors, to ensure comprehensive coverage of relevant content. Subsequent feedback prompted necessary revisions for clarity and cultural relevance. Additionally, the validation process assessed construct validity and reliability, utilizing Cronbach’s alpha for internal consistency, to ensure the questionnaire effectively measures the intended construct.

The questionnaire encompassed the following six sections: (1) demographics, (2) lifestyle, (3) health status, (4) pre-test of knowledge and awareness about the disease, attributable risk factors, alarming signs, and preventive measures, (5) a three-minute educational video (English version: https://youtu.be/uzN-Q5SUKmA; Arabic version:

https://youtu.be/yEvvQlX37gs), followed by (6) a post-test that consisted of the same sets of questions included in the pre-test.

Ethics approval

This study, approved by the Institutional Review Board at Abu Dhabi University under code CoHS–22-05-00018 on 05/16/2022, adhered to the Declaration of Helsinki. Before filling out the online survey, participants were briefed about the study objectives and their right to withdraw at any time. Informed consent was obtained from all participants. Participants did not receive any financial reward for their participation. The online survey was anonymous and voluntary. Collected data were encrypted, stored in password-protected computers, and presented as de-identified electronic files in Microsoft Excel and SPSS.

Sample size calculation

The minimum sample size was calculated using the G-Power software version 3.0.10.

The calculated effect size was 0.0526, expecting squared multiple correlations of 0.05 (R2 deviation from 0) related to the Omnibus test of multiple regression. The minimum necessary sample was n = 371, considering an alpha error of 5%, a power of 80%, and allowing 15 predictors to be included in the model. A minimum sample of 400 participants was targeted to account for potential missing values.

Data analysis

Data were analyzed on SPSS software version 25. A descriptive analysis was performed using absolute frequencies and percentages for categorical variables and means and standard deviations (SD) for quantitative measures.

As the skewness and kurtosis values of the dependent variable (knowledge total score) were within the acceptable range (− 2 and + 2), the data were considered to be normally distributed. In addition, the normal probability plots of the dependent variables were analyzed and the results showed a normal distribution.

The paired sample t-test was used to compare the stroke knowledge score before and after the education session. Also, a repeated measures ANOVA was performed to evaluate the mean change of the stroke total knowledge pre- and post-educational session after adjusting for the following covariates: age, gender, marital status, smoking, alcohol consumption, education level, healthy lifestyle index, having a stroke, a family history of stroke, and having any medical illness. The healthy lifestyle index is based on prior research [17–20] and provides a consolidated measure reflecting adherence to health-promoting habits and behaviors. It is calculated by summing individual scores for maintaining body weight in the normal range, being a non-smoker or former smoker, abstaining from alcohol, engaging in various levels of exercise (mild, moderate, and vigorous), and consuming fruits, vegetables, and fluids daily.

Three linear regressions were conducted, with the knowledge total score before and after the educational session and the difference between the two sessions as separate dependent variables. The model included sociodemographic variables along with those related to stroke risk factors. A p-value < 0.05 was considered significant.

RESULTS

Questionnaire validation

Results of the Factor analysis (Promax rotated component matrix) are found in supplementary material. In brief, the questionnaire explains 48.67% of the variance and its internal consistency was confirmed through Cronbach's alpha, yielding a high value of 0.911.

Sample description

A total of 685 participants were included in the study. Participants were predominantly females, highly educated, and aged 25 to 44. Only 2% had a history of previous stroke was seen in 2%, while 35.6% had a family history of stroke, 27% had a family history of myocardial infarction, 19% had high cholesterol, and 16% had high blood pressure. Around half had a healthy lifestyle, including no smoking, mild to moderate exercising, and a normal BMI (Table 1).

Table 1
Sociodemographic characteristics of the participants.

Variable	N (%)
Total participants	**685 (100)**
Gender	
Male	248 (36.2%)
Female	437 (63.8%)
Age	
25–34	285 (41.6%)
35–44	127 (18.5%)
45–54	155 (22.6%)
55 and above	118 (17.2%)
Marital status	
Single/widowed/divorced	325 (47.4%)
Married	360 (52.6%)
Education level	
Primary	30 (4.4%)
Secondary	50 (7.3%)
University	605 (88.3%)
Being a healthcare professional	
Yes	135 (19.7%)
No	550 (80.3%)
Stroke risk factors	
Family history of stroke	
Yes	244 (35.6%)
No	441 (64.4%)
Previous stroke	
Yes	14 (2.0%)
No	671 (98.0%)
Smoking	
Never smoke	401 (58.5%)
Current smoker	234 (34.2%)
Former smoker	50 (7.3%)

Variable	N (%)
Total participants	**685 (100)**
Gender	
Physical activity	
Not applicable	24 (3.5%)
Mild	359 (52.4%)
Moderate	229 (33.4%)
Vigorous	73 (10.7%)
BMI categories	
Underweight	24 (3.5%)
Healthy weight	334 (48.8%)
Overweight	225 (32.8%)
Obese	102 (14.9%)
Having any of the following health conditions	
High blood pressure	110 (16.1%)
History of myocardial infarction	35 (5.1%)
Family history of myocardial infarction	184 (26.9%)
History of coronary artery disease	65 (9.5%)
High cholesterol level	130 (19.0%)
Diabetes	68 (9.9%)
History of deep vein thrombosis	30 (4.4%)
History of pulmonary embolism	19 (2.8%)
Severe headache (migraine)	132 (19.3%)
	Mean ± SD
Household crowding index	0.95 ± 0.52

Comparison of stroke knowledge before and after the educational session

Table 2 presents the percentages of correct answers about stroke, stroke types, risk factors, warning signs, preventive measures, treatment, and the emergency status of disease occurrence. The frequency of correct responses improved after the educational intervention as compared to before.

Table 2
Public knowledge of stroke among participants

Question	Pre-education	Post-education	p-value
	n (%)	n (%)	
Definition of stroke (1 correct answer: brain)			
Correct	619 (90.4%)	648 (94.6%)	< 0.001
Wrong	30 (4.4%)	17 (2.5%)	
Unknown	36 (5.3%)	20 (2.9%)	
Types of stroke (2 types)			
1 type correct (ischemic or hemorrhagic)	584 (85.3%)	651 (95.0%)	< 0.001
2 types correct (ischemic and hemorrhagic)	297 (43.4%)	520 (75.9%)	< 0.001
Unknown	236 (34.5%)	67 (9.8%)	< 0.001
Risk factors for stroke - Diseases (Overall 5 factors)			
At least 1 factor correct	123 (18.0%)	52 (7.6%)	< 0.001
2 factors correct	72 (10.5%)	40 (5.8%)	
3 factors correct	93 (13.6%)	62 (9.1%)	
More than 3 factors correct	397 (58.0%)	531 (77.5%)	
Unknown	617 (90.1%)	592 (86.4%)	0.004
Risk factors for stroke - Lifestyle and others (Overall 6 factors)			
At least 1 factor correct	82 (12.0%)	30 (4.4%)	< 0.001
2 factors correct	57 (8.3%)	10 (1.5%)	
3 factors correct	104 (15.2%)	33 (4.8%)	
More than 3 factors correct	442 (64.5%)	612 (89.3%)	
Unknown	160 (23.4%)	47 (6.9%)	< 0.001
Stroke warning signs (overall 5 symptoms)			
At least 1 symptom correct	68 (9.9%)	27 (3.9%)	< 0.001
2 symptoms correct	45 (6.6%)	8 (1.2%)	
3 symptoms correct	76 (11.1%)	21 (3.1%)	
More than 3 symptoms correct	496 (72.4%)	629 (91.8%)	
Unknown	307 (44.8%)	99 (14.5%)	< 0.001
Stroke Treatment (overall 2 treatment options)			
1 treatment option correct	566 (82.6%)	647 (94.5%)	< 0.001

Question	Pre-education	Post-education	p-value
	n (%)	n (%)	
Definition of stroke (1 correct answer: brain)			
2 treatment options correct	388 (56.6%)	587 (85.7%)	< 0.001
In case of stroke, when to call ambulance			
Correct	624 (91.1%)	650 (94.9%)	< 0.001
Wrong	61 (8.9%)	35 (5.1%)	
Prevention of stroke (overall 6 lifestyle measures)			
At least 1 measure correct	2 (0.3%)	18 (2.6%)	< 0.001
2 measures correct	2 (0.3%)	-	
3 measures correct	5 (0.7%)	6 (0.9%)	
More than 3 measures correct	676 (98.7%)	661 (96.5%)	

Figure 1 shows the means of the knowledge total score before and after the educational session, after adjustment over age, gender, marital status, smoking, alcohol consumption, education level, healthy lifestyle, having a stroke, a family history of stroke, and having any medical illness. A significantly higher increase was found in the total knowledge score after the educational video (22.26 vs. 26.06, $p < 0.001$).

Bivariate analysis

The pre-test results showed a significantly higher mean score knowledge among healthcare professionals and participants with a family history of stroke. The post-test results indicated a significantly higher mean knowledge in participants 55 years and above (Table 3).

Table 3
Factors affecting the knowledge score (pre/post-test)

Variable	Knowledge score			
	Pre-test	*P value*	Post-test	*P value*
Gender				
Male	22.46 ± 6.03	0.528	26.26 ± 4.74	0.442
Female	22.15 ± 6.33		25.95 ± 5.07	
Age (years)				
25–34				
No	22.01 ± 6.05	0.202	26.26 ± 4.23	0.256
Yes	22.62 ± 6.44		25.80 ± 5.81	
35–44				
No	22.36 ± 6.19	0.411	26.15 ± 4.94	0.315
Yes	21.85 ± 6.33		25.66 ± 4.98	
45–54				
No	22.34 ± 6.20	0.571	25.97 ± 5.14	0.344
Yes	22.01 ± 6.30		26.40 ± 4.23	
55 and above				
No	22.28 ± 6.38	0.849	25.93 ± 5.23	**0.036**
Yes	22.16 ± 5.41		26.71 ± 3.20	
Marital status				
Single/widowed/divorced	22.86 ± 6.01	**0.017**	25.98 ± 5.38	0.674
Married	21.72 ± 6.35		26.14 ± 4.53	
University degree				
No	22.47 ± 4.99	0.752	26.50 ± 4.67	0.408
Yes	22.24 ± 6.36		26.01 ± 4.99	
Being a healthcare professional				
No	21.62 ± 6.22	**< 0.001**	25.93 ± 5.04	0.159
Yes	24.91 ± 5.49		26.60 ± 4.55	
Previous stroke				
No	22.22 ± 6.25	0.221	26.05 ± 4.98	0.623
Yes	24.28 ± 3.72		26.71 ± 2.94	
Family history of stroke				

Variable	Knowledge score			
	Pre-test	*P value*	Post-test	*P value*
Gender				
No	21.67 ± 6.58	**< 0.001**	26.00 ± 5.00	0.649
Yes	23.34 ± 5.34		26.18 ± 4.87	
Any high risk disease				
No	22.45 ± 6.20	0.386	26.39 ± 4.39	0.067
Yes	22.04 ± 6.24		25.68 ± 5.53	
Current smoker				
No	22.24 ± 6.31	0.875	26.27 ± 4.77	0.135
Yes	22.32 ± 6.04		25.67 ± 5.27	
Consumes alcohol				
No	22.25 ± 6.37	0.936	26.00 ± 5.21	0.710
Yes	22.28 ± 6.06		26.14 ± 4.67	
Healthy lifestyle index				
No	22.15 ± 6.21	0.250	26.05 ± 5.02	0.890
Yes	22.93 ± 6.26		26.13 ± 4.51	

Multivariable analysis

A first linear regression model was performed, taking the stroke knowledge pre-educational video as the dependent variable. The results showed that having a family history of stroke (Beta = 1.76) and being a healthcare professional (Beta = 3.35) were significantly associated with a higher knowledge score (Table 4, Model 1).

Table 4
Factors associated with knowledge, before and after the educational video as well as the difference between them.

Model 1: taking the knowledge of stroke pre-test as the dependent variable					
	Unstandardized Beta	**Standardized Beta**	**p-value**	**Confidence interval**	
				Lower Bound	**Upper Bound**
Age in years (25–34)	-0.722	-0.057	0.371	-2.304	0.861
Age in years (35–344)	-0.360	-0.022	0.652	-1.925	1.206
Age in years (45–54)	-0.220	-0.015	0.773	-1.717	1.277
Gender (female vs male*)	-0.370	-0.029	0.465	-1.365	0.624
History of stroke (yes vs no*)	2.252	0.051	0.177	-1.019	5.522
Family history of stroke (yes vs no*)	1.769	0.136	**< 0.001**	0.801	2.737
Healthcare professional (yes vs no*)	3.354	0.215	**< 0.001**	2.158	4.550
Alcohol (yes vs no*)	0.220	0.018	0.655	-0.748	1.188
Healthy lifestyle (yes vs no*)	0.592	0.033	0.377	-0.725	1.909
Current smoker (yes vs no*)	0.115	0.012	0.768	-0.647	0.876
Any high-risk disease (yes vs no*)	-0.652	-0.052	0.189	-1.626	0.322
Marital status (Married vs. single*)	-0.899	-0.072	0.129	-2.062	0.263
University degree (yes vs no*)	-0.596	-0.031	0.444	-2.125	0.933
Model 2: taking the knowledge of stroke post-test as the dependent variable					
	Unstandardized Beta	**Standardized Beta**	**p-value**	**Confidence interval**	
				Lower Bound	**Upper Bound**
Age in years (25–34)	-1.399	-0.139	**0.034**	-2.694	-0.104
Age in years (35–344)	-1.193	-0.094	0.068	-2.475	0.088
Age in years (45–54)	-0.485	-0.041	0.437	-1.710	0.741
Gender (female vs male*)	-0.219	-0.021	0.597	-1.034	0.595
History of stroke (yes vs no*)	0.778	0.022	0.569	-1.900	3.456
Family history of stroke (yes vs no*)	0.326	0.032	0.419	-0.466	1.119
Healthcare professional (yes vs no*)	0.879	0.071	0.078	-0.100	1.859
Alcohol (yes vs no*)	0.266	0.027	0.510	-0.526	1.058

Model 1: taking the knowledge of stroke pre-test as the dependent variable					
	Unstandardized Beta	Standardized Beta	p-value	Confidence interval	
				Lower Bound	Upper Bound
Healthy lifestyle (yes vs no*)	0.052	0.004	0.924	-1.026	1.130
Current smoker (yes vs no*)	-0.083	-0.011	0.794	-0.707	0.541
Any high risk disease (yes vs no*)	-1.031	-0.104	**0.011**	-1.828	-0.234
Marital status (Married vs. single*)	-0.119	-0.012	0.807	-1.070	0.833
University degree (yes vs no*)	-0.356	-0.023	0.577	-1.608	0.896
Model 3: taking the difference between the knowledge of stroke pre and post session as the dependent variable.					
	Unstandardized Beta	Standardized Beta	p-value	Confidence interval	
				Lower Bound	Upper Bound
Age in years (25–34)	-0.651	-0.065	0.304	-1.893	0.591
Age in years (35–344)	-0.794	-0.063	0.206	-2.025	0.437
Age in years (45–54)	-0.274	-0.023	0.646	-1.445	0.897
Gender (female vs male*)	0.126	0.012	0.750	-0.650	0.901
History of stroke (yes vs no*)	-1.525	-0.044	0.242	-4.082	1.032
Family history of stroke (yes vs no*)	-1.424	-0.139	**< 0.001**	-2.185	-0.663
Healthcare professional (yes vs no*)	-2.475	-0.200	**< 0.001**	-3.414	-1.536
Alcohol (yes vs no*)	0.050	0.005	0.897	-0.709	0.810
Healthy lifestyle (yes vs no*)	-0.558	-0.040	0.290	-1.593	0.477
Current smoker (yes vs no*)	-0.569	-0.055	0.151	-1.345	0.207
Any high risk disease (yes vs no*)	-0.360	-0.036	0.355	-1.124	0.404
Marital status (Married vs. single*)	0.749	0.076	0.108	-0.165	1.663
University degree (yes vs no*)	0.154	0.010	0.803	-1.055	1.363
Variables entered in the three models: gender, age, ever stroke, History of stroke, healthcare professional, smoking, alcohol, healthy lifestyle, medical illness, marital status and level of education.					
*Reference group					

When taking the knowledge of stroke post-education, the results showed that being between 25 and 34 years (Beta=-1.39) and having any high-risk disease (Beta=-1.03) were significantly associated with a lower knowledge

score (Table 4, Model 2).

A third linear regression analysis taking the difference between the knowledge of stroke pre- and post-education as the dependent variable showed that having a family history of stroke (Beta=-1.42) and being a healthcare professional (Beta=-2.47) were significantly associated with a lower difference in the knowledge score (Table 4, Model 3).

DISCUSSION

Our study showed that a brief educational video could enhance the public's knowledge about stroke risk factors, symptoms, and preventive measures within the Lebanese community.

A prior study in Lebanon indicated insufficient awareness of stroke risk factors and the importance of dialing 112 (the emergency number in Lebanon) when stroke symptoms occur, underscoring the need for health education programs to reduce stroke-related morbidity and mortality [15]. Educational videos have been recognized as efficient tools for a broad audience, with visual images offering advantages over verbal communication, including conveying additional information within a limited timeframe, simplifying complex ideas, illustrating dynamic concepts, and engaging and retaining the audience's attention more efficiently [21]. For example, studies utilizing animated video formats for educational interventions have shown consistent improvements in short-term patient health outcomes [22]. Similarly, a systematic review in 2012 confirmed the value of video-based education in altering health behaviors, showing efficacy in promoting various health-related actions, including prostate cancer screening, sunscreen adherence, human immunodeficiency virus (HIV) testing, and treatment adherence [23]. The literature focusing on stroke knowledge and awareness has also demonstrated positive outcomes [24, 25].

In our study, the three-minute video employed persuasive techniques, images, and modeling to communicate essential information and influence participants' health behavior. Participants exhibited a notable improvement in identifying stroke resulting from bleeding or an obstruction in blood flow to the brain. This improved awareness aligns with findings from previous studies conducted globally [26–28]. Furthermore, the ability to distinguish between a stroke and a heart attack is crucial, and our results contribute to reducing confusion between these two conditions, evident in the increased understanding of stroke's definition after watching the educational video, especially recognizing that it occurs in the brain, not the heart.

Notably, participants demonstrated an enhanced understanding of diseases and lifestyle factors associated with an elevated risk of stroke. The pre-test revealed a lack of knowledge about risk factors, consistent with earlier research [28, 29]. However, post-education scores significantly increased, emphasizing the pivotal role of health education in expanding public awareness.

Improvements were also evident in participants' recognition of stroke warning signs, particularly those emphasized by FAST (Facial, Arms, Speech, Time). Previous studies highlighted challenges in the community in detecting these signs [29, 30]. However, our results indicated increased awareness, with respondents expressing a willingness to promptly seek medical assistance and call an ambulance in the event of a stroke, both before and after the intervention, mirroring findings from other studies [26, 28, 30]. This consistency highlights the prevailing perception among the public that stroke is a life-threatening and urgent medical condition.

Family history of stroke emerged as a predictor of stroke knowledge, consistent with research in Nigeria, Morocco, and France, emphasizing the role of interpersonal relationships in disseminating medical information [31–33]. Traumatic experiences with close relatives may contribute to heightened awareness and understanding of stroke [34].

Moreover, older participants (aged 55+) had higher improvement in stroke knowledge, potentially influenced by a greater likelihood of comorbidities, motivating them to learn more about the condition.

Before watching the video, most respondents had a robust understanding of stroke prevention strategies, a comprehension that remained consistently high after the educational intervention. In contrast to earlier research findings, our sample displayed a superior level of optimal knowledge [35, 36]. This difference may be attributed to variations in the socioeconomic and sociodemographic characteristics of the participants, particularly the higher rate of formal education in our sample.

Interestingly, our study could not find evidence supporting the notion that females consistently possess higher levels of stroke knowledge. While a few studies have suggested a gender-based difference in stroke awareness and interest in health-related topics, with females exhibiting a higher level of understanding [37–39], our findings did not align with this specific trend.

Some studies have demonstrated that individuals who embrace healthy behaviors such as regular exercise [40] and maintaining a nutritious diet [41] tend to possess greater awareness of the warning signs, risk factors, and preventive measures associated with stroke. However, our findings did not provide evidence supporting this relationship.

Furthermore, our study revealed a deficiency in participants' understanding of the optimal stroke treatment, validating similar discoveries in existing research [42, 43]. Previous studies on stroke awareness have predominantly concentrated on symptoms and risk factors, neglecting adequate attention to treatment alternatives. Without knowledge about available treatments or the urgency of the situation, the recognition of symptoms alone is unlikely to prompt individuals to take swift action [44], hence the importance of time in public awareness campaigns when advocating for the best possible treatment approaches. Following the educational video, participants demonstrated an increased awareness of stroke treatment, reinforcing the idea that the visual and auditory elements inherent in video content provide a more immersive learning experience, enhancing the comprehension and retention of critical concepts related to stroke awareness and management. Combining visual representations of symptoms, emergency response procedures, and preventive measures created a comprehensive learning environment that caters to various learning styles. Moreover, the accessibility of videos such as the one used in this study across digital platforms ensures a broader reach, enabling wide dissemination of vital information to communities, thereby contributing significantly to the overall effort to enhance public awareness and preparedness for stroke and how to manage it.

Limitations and Strengths

The study has several limitations that need to be acknowledged. The online survey could introduce selection bias as individuals with no internet access and those unfamiliar with technology would be excluded. Consequently, an overestimation of the knowledge results is likely as less privileged populations may have had a lower chance of inclusion. The questionnaire employed in the study consisted of closed-ended questions, which could lead to an overestimation of stroke knowledge among respondents. Participants self-reported their characteristics and responses, which could contribute to non-differential information bias. Furthermore, the study did not measure the long-term effects of the educational intervention. Larger-scale prospective studies would be required to evaluate this outcome. Nonetheless, our study used of a meticulously validated questionnaire to ensure the reliability and validity of our data collection and represents the first attempt to assess the effectiveness of an educational video in improving stroke knowledge in Lebanon potentially saving lives.

CONCLUSION

This study demonstrated the effectiveness of a video-based educational tool to raise awareness about stroke. Short, targeted audio-visual resources using lay language can convey health education messages and influence behavioral changes. The community can benefit from a large-scale educational campaign that targets different socio-economic statuses to enhance knowledge of stroke and save lives.

Abbreviations

AHA/ASA
American Heart Association/American Stroke Association
LMICs
Low- and Middle-Income Countries
SPSS
Statistical Package for the Social Sciences
ANOVA
Analysis of Variance
HIV
Human Immunodeficiency Virus

Declarations

Ethics approval and consent to participate

The Institutional Review Board at Abu Dhabi University gave approval to conduct this study (CoHS-22-05-00018.16/May/2022), and informed consent was obtained from all participants.

Consent for publication

Not applicable

Availability of Data and Materials

All data generated or analysed during this study are included in this published article and its supplementary information files. The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

MC obtained funding. MC, KI and PS developed the research question and contributed to the study design and analysis plan. MC, KI, PS developed the educational video and piloted the questionnaire. SY, TA, YS collected the data. JS, FS, HS, HH contributed to literature review. CH performed the statistical analyses. JS, KI, HS, HH, FS, SY, TA, YS drafted the manuscript. All authors critically revised the manuscript, gave final approval and agree to be accountable for all aspects of work ensuring integrity and accuracy.

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Figures

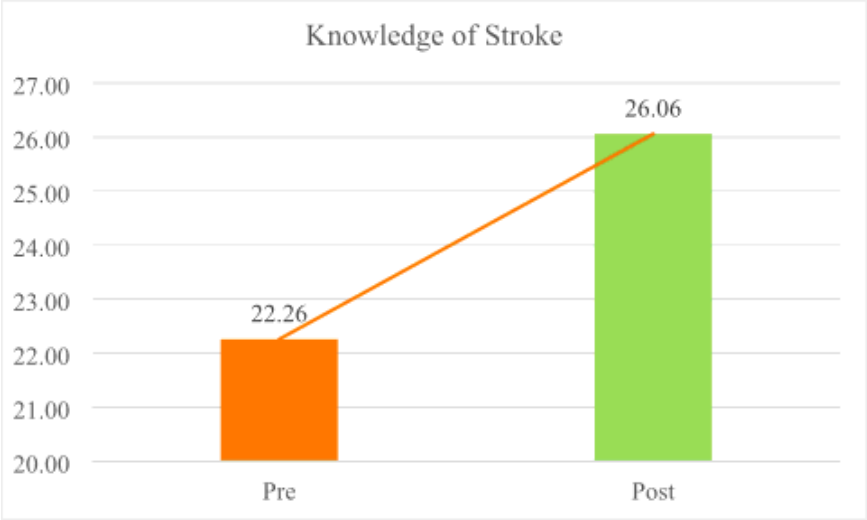

Figure 1

Adjusted mean of the knowledge total score before and after educational video.

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