Original Article :

Evaluation of the Perceived Knowledge of Stroke Risk Factors among Healthcare Students at Northern Border University.

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Abstract

Background and Aims:

Stroke is a major global health issue, particularly in developing countries like Saudi Arabia. Healthcare students' perceived knowledge of stroke risk factors is crucial for future care, as they will be responsible for stroke patients. Improved awareness can lead to better prevention strategies and patient outcomes, benefiting healthcare professionals.

Methods:

A descriptive study design assessed healthcare students' Perceived knowledge of stroke risk factors. The study recruited participants from Nursing, Medicine, and Applied Science. Data was collected using an electronic questionnaire, which included questions on general stroke knowledge, Perceived knowledge of stroke risk factors and warning signs, and stroke management. The data was analyzed using descriptive statistics and appropriate statistical tests.

Results:

The study found variations in stroke knowledge among healthcare students across the three colleges. While most students had satisfactory knowledge of stroke risk factors and warning signs, there were areas of inadequate perceived knowledge. The study also identified areas for improvement in stroke education and training. The results highlighted the need for ongoing post-graduate education to keep healthcare students updated on new research findings and developments in managing stroke risk factors.

Conclusions:

The study emphasizes the importance of enhancing healthcare students' perceived knowledge of stroke risk factors for effective prevention and patient outcomes. It emphasizes the need for multidisciplinary collaboration in stroke management and healthcare. It emphasizes the need for continuous post-graduate education to keep medical students updated on stroke prevention and management research.

Keywords:
Perceived Knowledge, Stroke, Risk Factors, Healthcare Students, and Northern Border University.

Introduction

One of the leading causes of morbidity and mortality among the general population worldwide is stroke. It is estimated that there are about 15 million new cases of stroke worldwide each year, with two-thirds occurring in developing nations. According to evaluations, the disability-adjusted life years lost following a stroke are approximately 90% in developing nations, compared to almost seven times the number in industrialized nations. With 5.8 million fatal occurrences annually, stroke is ranked as the third most common cause of death worldwide [1].

Stroke has significant global societal and financial effects. In the Middle East, it is becoming increasingly common and a significant health concern [2]. According to a Saudi Arabian study, the annual prevalence is 29 per 100,000. Stroke is becoming a significant cause of illness and death, and it is becoming increasingly prevalent in Saudi Arabia. As a result, its effects on society and the economy have emerged as one of the most significant medical issues facing Kingdom [3].

Healthcare students greatly influence the treatment and results of stroke patients. Nonetheless, it is worthwhile to increase their perceived knowledge of and proficiency with stroke management techniques during their education. Additionally, evaluating healthcare students' knowledge and comprehension is crucial since, after graduation, they will likely be expected to care for stroke patients in emergency rooms or intensive care units [4].

Since healthcare students will eventually work as healthcare professionals, they should receive a thorough education on the risk factors for stroke. As such, they will play an important role in stroke prevention and management. Healthcare students will be able to recognize stroke early if they thoroughly comprehend all stroke risk factors, including emerging or uncommon risk factors. In the long run, it may improve patient outcomes and bring relief to healthcare facilities [5].

Improved perceived knowledge and awareness of stroke risk factors among healthcare students would result in more concentrated and targeted prevention. Similarly, if patients know their risks, healthcare providers can intervene for each risk

factor. This could be a feasible option that would aid in the reduction of stroke cases among vulnerable people. As a result, it is critical to educate healthcare students on various types of stroke risks to maximize stroke prevention [6].

Perceived knowledge of stroke risk factors among healthcare students may influence patient education and healthy lifestyle promotion. Furthermore, healthcare students are assisted in delivering crucial information regarding lifestyle changes and other risk factors that, with the appropriate knowledge, may lead to a stroke. Giving patients meaningful information can help improve their attitudes toward health-promoting habits and adherence [7].

Since managing strokes requires interdisciplinary teamwork, medical students should know the various stroke risk factors and how to contribute to a healthcare team. Healthcare students may have a shared perceived knowledge of the risk factors for stroke, which can help them collaborate with others to ensure stroke patients' complete recovery. Such teamwork improves stroke patient outcomes and improves overall treatment [8].

Because stroke risk factors vary and new results emerge, healthcare students should get ongoing post-graduate education. It is vital that medical students have an essential knowledge of current research findings and developments in managing stroke risk factors. As a result, it will ensure they have current knowledge, enabling them to provide patients with educated treatment. Medical professionals can stay competent and effective in treating stroke-related problems by participating in regular training and other career-improvement programs [9]. Therefore, our study aims to evaluate the perceived knowledge of stroke risk factors among healthcare students at Northern Border University.

Methodology

Research design

A descriptive cross-sectional study was used to conduct this study and evaluate the perceived knowledge of stroke risk factors among healthcare students at Northern Border University. In this study, the researchers aimed to evaluate the healthcare students' perceived knowledge of stroke risk factors, which is crucial as these students will play a significant role in stroke prevention and management in their future healthcare careers.

Participants:

This study recruited healthcare students from three colleges Nursing, Medicine, and Applied Science college at Northern Border University, both male and female from first grade to sixth grade. They were 18 to 25 years old and agreed to participate

in this study. The sample size was determined according to the following equation:

Sample size:

A sample size of the total population of 1225 healthcare students at Northern Border University will be 221 students who need to be recruited to achieve a confidence level of 90%.

Type I error (a) = 0.05

Type II error (B) = 0.2

With the power of test 0.80

$$n = \frac{N \times p(1-p)}{[[N-1 \times (d^2 \div z^2)] + p(1-p)]}$$

$$221 = \frac{1225 \times 0.50(1-0.50)}{[[1225-1 \times (0.05x^2 \div 1.64\,x^2)] + 0.50(1-0.50)]}$$

The study used a convenience sample of 221 students.

Target population

Healthcare students from three colleges, Nursing, Medicine, and Applied Science college at Northern Border University, present at the time of the study were approached to be included.

Settings:

Three health Colleges, Nursing, Medicine, and Applied Science colleges from Northern Border University.

Tools of data collection:

A tool has been developed to assess the knowledge of stroke risk factors among Northern Border University healthcare students. The tool aims to understand the educational needs of future healthcare professionals by capturing their awareness and understanding of stroke risk factors. The development process includes item development, content validity assessment, pilot testing, and reliability analysis. The data collected will inform educational interventions and curriculum enhancements, bridging the knowledge gap and equipping students with the necessary knowledge to prevent, identify, and manage stroke in their future practice.

The first part is sociodemographic student data such as age, gender, year level, and college.

The second part, knowledge of stroke awareness, which included 32 questions, was sorted into 4 categories. Student general knowledge of stroke (3 items). The second and third sections cover perceived knowledge of stroke risk factors and warning signs (24 items). The fourth component of the questionnaires, which consisted of five items, addressed the management of stroke. All the questionnaires were scored on a three-point scale: true, false, and I do not know. Each correct answer scored 1, and each incorrect answer scored zero. The total score was computed to 100%, and the participants' overall knowledge was assessed and classified according to Bloom's cut-off point. A score between 80 and 100%

was considered good, a score between 60 and 79% was considered moderate, and a score below 60% was considered poor[10].

Validity:

The questionnaire's validity was evaluated using several methodologies, such as face validity and content validity. Face validity was established by obtaining the opinions of stroke research experts who reviewed the questionnaire items and provided feedback on the extent to which the questions seemed to accurately measure the intended construct of stroke risk factors. Their experienced assessment was important in detecting any items that may appear inconsequential or unsuitable, and we made requisite modifications based on their input.

Furthermore, content validity was ensured by incorporating pertinent and thorough topics about stroke risk factors. We did a comprehensive analysis of the available literature, recommendations, and expert opinions to determine the primary risk variables linked to stroke. The provided information was utilized to direct the selection and composition of questionnaire items. The questionnaire was designed to capture a broad spectrum of risk variables, including both well-established and emergent factors, to conduct a thorough evaluation of stroke risk. A panel of experts reviewed each item, assessing its relevance and representativeness. The Content Validity Index (CVI) was calculated using the I-CVI (0.82) and S-CVI (0.94) methods.

Through the utilization of these techniques, the aim was to improve the questionnaire's validity and guarantee its ability to comprehensively measure many elements of stroke risk factors.

Reliability:

Internal Consistency: The reliability of the questionnaire was assessed by calculating the internal consistency of the items whereas the Cronbach alpha equals 0.917 for 32 items. The researchers used a three-point scale (true, false, and I do not know) to score the responses. Each correct answer was given a score of 1, and each incorrect answer was scored as 0. The total score was computed to assess the participants' overall knowledge. Using a standardized scoring system enhances the internal consistency of the questionnaire.

Ethical Considerations

The ethical agreement was obtained from the Local Committee of Bioethics (HAP-09-A-043) at Northern Border University (approval # 96/23/H) on 30/10/2023. The administrative agreement was attained from the dean of the Nursing College. Consent was achieved from the participant before their inclusion in the

study and after explaining the aim of the study. The participants were informed that all information was coded, and confidentiality was considered.

Data collection

Data collection was done electronically via a Google survey, and the researchers shared the links with all students after explaining and clarifying the aim of the study and writing the aim and the consent for participation in the Google survey.

Procedure

The data was collected using an electronic questionnaire between October 2023 and November 2023. The surveys were submitted online using Google Forms; a questionnaire link was distributed to the participants to complete and submit. Participants were invited to participate in the study. Participants in the study are given instructions and information about scientific research's purpose and ethical aspects and a warning not to provide any personal information before the questionnaire has been jointly approved.

Statistical Analysis:

Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables and means and standard deviations for quantitative variables. It was analyzed with the program Statistical Package for Social Science (SPSS) version 26. Proper and suitable statistical tests were used to test the results' significance. Shapiro-Wilk Test and Kolmogorov-Smirnov Test were used to determine whether a variable follows a normal distribution, when a normal distribution of the data could not be assumed, the non-parametric test was used instead. The differences in the knowledge scores according to the students' socio-demographic characteristics were conducted using the Mann-Whitney Z-test and Kruskal Wallis H-test.. Statistical significance was considered at p-value <0.05.

Table (1): Distribution of Studied Students Regarding Their Personal Characteristics (N=236).

Items	No	%
Age/ years		
≤20	160	67.8
>20	76	32.2
Mean and SD	19.86±1.378	
Gender		
Male	68	28.8
Female	168	71.2
Grade		
First	71	30.1

Items	No	%
Gender		
Second	35	14.8
Third	63	26.7
Fourth to sixth	67	28.4
College		
Nursing	128	54.2
Medicine	60	25.4
Applied Medical Sciences	48	20.3

Table 1 describes the personal characteristics of Heath College students; it shows that more than two-thirds of students (67.8%) are aged ≤20 years, with a mean age of 19.86 years. Nearly three-quarters (71.2%) are female, with 28.8% male. The students are distributed across different grades, with 30.1% in first, 26.7% in third, 28.4% in fourth or higher, and 14.8% in second. More than half (54.2%) are enrolled in Nursing college, followed by 25.4% in Medicine and 20.3% in Applied Medical Sciences, indicating a diverse student population with varying interests and specializations.

Table (2): Distribution of Studied Students Regarding Their Correct General Knowledge of stroke (N=236).

Items	Nursing		Medicine		Applied Medical Sciences	
	No	%	No	%	No	%
General Knowledge of stroke						
A stroke or brain attack happens when blood flow to your brain is stopped.	115	89.8	51	85.0	47	97.9
A stroke affects the ability to move, eat, and other body functions	119	93.0	56	93.3	44	91.7
What is the window period of thrombolysis in hours?	60	46.9	28	46.7	18	37.5
Knowledge of stroke risk facto rs						
Diabetes	59	46.1	35	58.3	15	31.3
Hypertension	102	79.7	49	81.7	40	83.3
Hyperlipidemia	78	60.9	40	66.7	30	62.5
Heart disease	102	79.7	49	81.7	35	72.9
Alcohol	92	71.9	42	70.0	30	62.5
Tobacco	90	70.3	41	68.3	29	60.4
Birth control pills	47	36.7	24	40.0	11	22.9
High red blood cell count	71	55.5	31	51.7	22	45.8
Older age	92	71.9	44	73.3	31	64.6
Gender	39	30.5	22	36.7	15	31.3
Heredity or genetics	69	53.9	31	51.7	26	54.2

Items	Nursing		Medicine		Applied Medical Sciences	
	No	%	No	%	No	%
History of prior stroke	84	65.6	46	76.7	36	75.0
Lack of exercise	87	68.0	40	66.7	31	64.6
Knowledge of Warning Signs of Stroke						
Blurred vision in 1 or both eyes	99	77.3	50	83.3	35	72.9
Chest pain	70	54.7	34	26.6	26	54.2
heart palpitations	94	73.4	38	63.3	31	64.6
Difficulty in speaking and Perceived knowledge	102	79.7	51	85.0	35	72.9
slurred speech	90	70.3	47	78.3	39	81.3
Difficulty in walking	103	80.5	48	80.0	38	79.2
Dizziness	98	76.6	49	81.7	42	87.5
Loss of balance	104	81.3	43	71.7	40	83.3
Numbness or weakness of the face and or limb of the body	103	80.5	46	76.7	41	85.4
Severe headache with unknown cause	96	75.0	47	78.3	40	83.3
Shortness of breath	83	64.8	38	63.3	35	72.9
Knowledge of the Management of stroke						
I will call the ambulance.	116	90.6	50	83.3	45	93.8
I will give home remedies.	84	65.6	40	66.7	36	75.0
I will give the patient the first painkiller to control the pain.	78	60.9	40	66.7	35	72.9
I will not do anything to let the patient recover by him/herself.	107	83.6	47	78.3	37	77.1
I will take the patient to the hospital immediately.	112	87.5	51	85.0	45	93.8

Table 2 explains the distribution of studied students' knowledge of stroke in three colleges: Nursing, Medicine, and Applied Medical Sciences. It shows that most students in all three colleges understood that a stroke occurs when blood flow to the brain is stopped, with 89.8% in Nursing, 85.0% in Medicine, and 97.9% in Applied Medical Sciences. They also understood that a stroke affects movement, eating, and other body functions. In the Nursing college, 93.0% answered correctly, in the Medicine college, 93.3% answered correctly, and in the Applied Medical Sciences college, 91.7% answered correctly. However, the study found that while 46.9% of students in Nursing, 46.7% in Medicine, and 37.5% in Applied Medical Sciences colleges correctly answered the window period of thrombolysis in hours, the majority (53.1% to 62.5%) provided incorrect responses.

Regarding knowledge of stroke risk factors, it reveals that students in three colleges correctly identified diabetes as a risk factor for stroke, with 46.1% in Nursing and 58.3% in Medicine. Meanwhile, 79.7% in Nursing, 81.7% in Medicine, and 83.3% in Applied Medical Sciences identified hypertension as a risk factor. Hyperlipidemia was identified as a risk factor by

60.9% in Nursing, 66.7% in Medicine, and 62.5% in Applied Medical Sciences. Additionally, heart disease was recognized as a risk factor by 79.7% in Nursing, 81.7% in Medicine, and 72.9% in Applied Medical Sciences. Alcohol and tobacco use were identified as risk factors by 71.9% in Nursing, 70.0% in Medicine, 62.5% in Applied Medical Sciences, and 60.4% in Applied Medical Sciences.

Regarding knowledge of stroke warning signs. Most students correctly identified blurred vision, chest pain, heart palpitations, difficulty in speaking and perceived knowledge, and slurred speech as warning signs of stroke. In the Nursing college, 77.3% of students correctly identified blurred vision, while 83.3% in Medicine and 72.9% in Applied Medical Sciences. In the Medicine college, 63.3% of students correctly identified heart palpitations, while 64.6% recognized heart palpitations. 81.3% of students correctly identified slurred speech in the Applied Medical Sciences college. Overall, students across all three colleges recognized these warning signs as significant indicators of stroke risk.

Regarding stroke management from three colleges (Nursing, Medicine, and Applied Medical Sciences). Most students recognized the importance of calling an ambulance in case of a stroke, with 90.6% in Nursing, 83.3% in Medicine, and 93.8% in Applied Medical Sciences. However, a significant percentage of students incorrectly indicated they would give home remedies for stroke management. Most students recognized that giving the patient the first painkiller is not an appropriate management strategy for stroke. A small percentage of students incorrectly indicated they would not do anything to let the patient recover independently. Most students recognized the importance of taking the patient to the hospital immediately, with 87.5% in Nursing, 85.0% in Medicine, and 93.8% in Applied Medical Sciences.

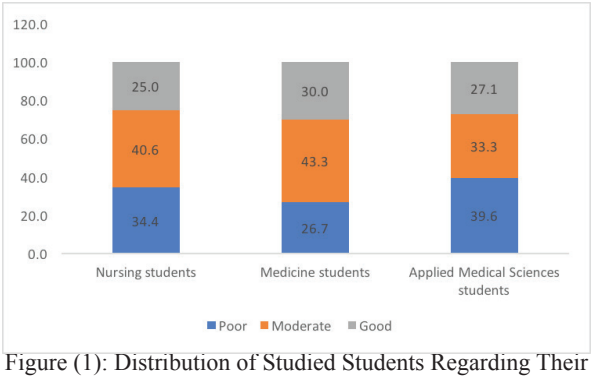


Figure (1): Distribution of Studied Students Regarding Their Total Knowledge of stroke (N=236).

Figure 1 reveals variation in stroke knowledge among students across three colleges: Nursing, Medicine, and Applied Medical Sciences. In Nursing, 25% of students had good knowledge, 34.4% had poor knowledge of stroke risk factors, and 40.6% had moderate knowledge. In Medicine, 30% of students had good knowledge, 26.7% had poor knowledge of stroke

risk factors, and 43.3% had moderate knowledge. Applied Medical Sciences had 27.1% of students had good knowledge, 39.6% had poor knowledge of stroke risk factors, and 33.3% had moderate knowledge, indicating areas for improvement in stroke education and training.

Table (3): Relation of demographic characteristics and Total Knowledge of stroke (N=236).

Parameter	Perceived Knowledge of stroke		Z/H-test	P value
	$\bar{x}$	SD		
Age/ years				
<20	20.94	7.57	Z=-.044	.965
≥20	21.08	7.02		
Gender				
Male	21.51	6.75	Z= -.359	.719
Female	20.77	7.63		
Grade				
First	20.82	6.72	H=1.815	.612
Second	20.63	7.91		
Third	20.87	9.30		
Fourth and more	21.46	5.68		
College				
Nursing	21.02	7.45	H=.778	.678
Medicine	21.23	7.58		
Applied Medical Sciences	20.58	7.07		

Table 3 reflects that demographic factors such as age, gender, grade, and college do not significantly impact participants' overall perceived knowledge of stroke. Participants under the age of 20 and those 20 years or older did not significantly differ in their average overall knowledge about stroke. Age does not significantly affect one's overall perceived knowledge of stroke, according to the Z-test's non-significant p-value of.965. The grade level has little impact on the overall knowledge of stroke, according to the non-significant p-value of .612 obtained from the H-test. The participants from different colleges did not show a significant difference in their overall knowledge of stroke based on their education.

Discussion

Our study evaluated Northern Border University healthcare students' perceived knowledge of stroke risk factors, warning signs, and management. Findings show that participants in the study were primarily female (71.2%) and aged ≤20 years.

Interestingly, the study found that students at Heath College represented a wide range of grade levels. Over half are enrolled in Nursing, followed by Medicine and Applied Medical Sciences.

A study done by Qadhi [11] to assess knowledge and awareness of warning signs about Lung cancer among Pharmacy and Nursing undergraduates in Riyadh, Saudi Arabia, involved 159 undergraduates, primarily males aged 18-25, predominantly from Nursing (54%), and 46% from Pharmacy (46%), with over half in their fifth academic year.

Our findings indicate that most students at all three colleges understood what a stroke is and how it affects movement and other bodily functions. On the other hand, most students gave inaccurate answers, indicating a lack of proper information on the window time of thrombolysis. This finding is similar to an investigation conducted among Nigerian nursing students by Kankaya and Yesilbalkan [12] found that 53.2% of the population was aware of risk factors and 53.2% was aware of stroke warning symptoms (53.8%). Also, the finding aligns with Syed et al. [7], who stated that (88.8%) of the students agreed that stroke impairs body mobility. The majority, 93.7% of pharmacy students, 88.9% of nursing students, and 91.7% of EMS students, agreed that stroke occurs when blood flow to the brain is interrupted. According to one-third (38.5%) of the students, the thrombolysis window period was between 0 to 4.5 hours.

The findings demonstrate the student's perceived knowledge of the risk factors for stroke. It shows that while there was a good level of awareness about risk factors such as hypertension and heart disease, there were gaps in knowledge on diabetes, hyperlipidemia, alcohol use, and tobacco use. It is critical to highlight attention to the fact that many students lack sufficient perceived knowledge of this subject. A study by Almalki et al. [13] found that medical students' awareness of the risk factors for stroke was considered adequate. Ninety percent of the medical students recognized two or more stroke risk factors. High hypertension (82.9%), high cholesterol (75.5%), and smoking (73.6%) were the most mentioned risk factors. So, the educational authority must add comprehensive stroke education programs to the healthcare student curriculum that cover all critical risk variables to enable accurate risk assessment and management strategies. Additionally, Adebimpe [14] revealed that hypertension (82.6%), advanced age (74.9%), hypercholesterolemia (42.8%), diabetes (35.9%), and smoking (27%) were found to be the most often recognized risk factors for stroke in a survey of undergrad-

uate students in southwest Nigeria. Recent Saudi Arabian research by Mirghani et al.[15] found that 90.4% of female medical students and 88.8% of male medical students classified hypertension as a risk factor for stroke.

It is unambiguous that most students at each of the three colleges understand sufficiently the warning signs of stroke. Students accurately recognized many essential warning signs of stroke risk, including slurred speech, difficulty speaking and perceived knowledge, chest pain, and heart palpitations. This is consistent with earlier studies carried out by Kankaya & Yeşilbalkan [12], which revealed that over half of the students (53.2%) understood or were aware of the stroke risk factors to an acceptable level. In contrast, Rizvi et al. [16] reported that the most often reported (56.3%) warning sign for rapid onset of stroke was a sudden loss of speech or inability to describe oneself in words, followed by severe headache with flashing lights (48.9%). Other reported warning signs of a stroke's development were weakness or numbness of the face, particularly on one side of the body (44.0%), abrupt disorientation (43.3%), and difficulty speaking owing to the rapid onset of back pain (43.0%).

The finding explained that students in three colleges (Nursing, Medicine, and Applied Medical Sciences) overwhelmingly recognized the importance of calling an ambulance for stroke management, with most students stating that home remedies are unsuitable. However, a significant percentage of students lacked satisfactory knowledge about stroke care, with 50.8% of nurses and 65.0% of medical students having inadequate knowledge. This finding emphasizes the crucial need for continuous training programs for healthcare students, which can be accomplished by involving them in continual learning through different strategies in the training program. According to this research, healthcare students' awareness of stroke management must reach the most significant level possible to provide reliable and efficient medical treatment.

This finding aligns with Sayed et al. [7], who reported that most students (70.2%) agreed to call an ambulance if they suspected a stroke. However, 40.5% of them concurred that if the patient is having a stroke, they should go to the hospital right away. Similarly, Islam [17] study examined nurses' awareness levels of stroke management, 63% of respondents had adequate levels, 20% had excellent levels, and 17% had low awareness regarding managing stroke.

The study shows that stroke knowledge among students in three colleges - Nursing, Medicine, and Applied Medical Sciences

- varies significantly. In Nursing, 25% of students have good knowledge, while in Medicine, 30% have good knowledge, and in Applied Medical Sciences, 27.1% have good knowledge, with areas for improvement in stroke education and training. Consistent with our findings, Sowtali et al. [18] concluded that nursing students, despite having theoretical knowledge of stroke, often lack clinical exposure to managing stroke patients. Almost half of them believe it is crucial to have information on stroke risk factors, warning signs, rehabilitation, feeding and catheter care, follow-up, discharge plan, and communication, even in their final year of study.

Additionally, our findings revealed the effect of demographic parameters such as age, gender, grade level, and college on participants' general awareness of stroke. The findings show that these variables did not affect the participants' overall knowledge of stroke. This shows that, regardless of age, gender, grade, or college, comprehensive stroke education must be provided to ensure consistent knowledge among students. In contrast, Elfaki & Mustafa [19] reported that comparing stroke-related knowledge with a participant's education level positively impacted participants' awareness. While most participants in the fourth class had a moderate level of knowledge about stroke risk factors, both the third and fourth classes had an insignificantly low level of knowledge about the signs and symptoms of stroke (p-value is 0.037). P-value higher than 0.005.30. Additionally, Syed et al. (2023) [7] added that there is a relationship between participants' knowledge level and their demographic characteristics. The knowledge score and educational attainment were not significantly related ($p = 0.057$). Nonetheless, there was a significant association ($p = 0.020$) between the academic year of study and the knowledge level.

Conversely, Elmisbah et al.[20] conducted a recent study about awareness and perception toward obesity and knee osteoarthritis and their preventive measures among the adult population in the Northern Borders Region, Saudi Arabia found that statistically significant correlations between gender and knowing about obesity ($p = 0.021$), as well as between age and understanding of obesity ($p = 0.040$). There were significant correlations between educational levels and awareness of rheumatoid arthritis ($p = 0.012$), perceiving aging as a cause of knee arthritis ($p = 0.002$), as well as knowledge of different preventive strategies and treatment choices.

However, the current study has some limitations. First, the results were based on a self-completed questionnaire. Second, the participants were recruited in the

convenience sample and were taken from a single university in Saudi Arabia; thus, the conclusions of this study cannot be generalized to the broader Saudi Arabian student population. Despite these limitations, our study emphasizes increasing awareness of risk factors and warning signs/symptoms of stroke and its consequences to make healthcare students more competent in enhancing public health.

Conclusion

In conclusion, the results show that the student's perceived knowledge of stroke has strengths and weaknesses. Although the degree of knowledge in some areas is excellent, there are still gaps in the areas of the thrombolysis window time, particular risk factors, and appropriate stroke care. The results highlight the significance of implementing focused educational programs that improve students' perceived knowledge and verify their readiness to prevent, recognize, and manage strokes competently in their prospective healthcare professions. Improving healthcare students' knowledge and perceived knowledge of stroke risk factors is critical for focused prevention and improved patient outcomes. The study stressed the need for multidisciplinary collaboration in stroke management and healthcare to understand stroke risk factors comprehensively. Providing proper knowledge to healthcare students can help reduce the burden of stroke and improve patient care.

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Ethics Statement

The Northern Border University Scientific Research Ethics Committee approved the study. Before conducting interviews, written consent, and permission to record were obtained.

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