Nepal Journal of Multidisciplinary Research (NJMR)
Vol. 6, No. 2, June 2023. Pages: 36-57
ISSN: 2645-8470 (Print), ISSN: 2705-4691 (Online)
DOI: https://doi.org/10.3126/njmr.v6i2.57198

Awareness Status of Stroke among the Students of Saraswati Multiple Campus: An Exploratory Study

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Received: April 24, 2023; Revised & Accepted: June 23, 2023

Abstract

Stroke is a cerebrovascular disease characterized as a medical emergency that occurs when a blockage ensues in the brain and the blood supply is interrupted or discontinued by any means. It is popularly categorized as Ischemic stroke, Intracranial Hemorrhage, and Subarachnoid Hemorrhage and is one of the leading cause of deaths worldwide. This research includes prevention techniques, treatment strategies, opinions, and the awareness status of respondents, sequentially including the citations of various researchers on the issue of stroke. The research explores stroke-associated factors and the awareness status among the students, who are currently pursuing the degree, Master of Arts in Sociology and English at Saraswati Multiple Campus, Tribhuvan University. Similarly, the number of respondents was 22, and the data was collected through a convenience sampling technique that demonstrates the opinions of the

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respondents. The researcher has used both qualitative and quantitative methods to analyze the data. The principal findings present that the respondents (40.91%) believes hypertension is the major factor in stroke, whereas respondents (54.5%) agrees that exercise and healthy lifestyle modification can reduce the risk factors. Correspondingly, the data concludes respondents (86.4%) takes the stroke patient to the hospital and shows the overall awareness status is satisfactory. Furthermore, the knowledge in the event of stroke contribution to the patient is strong and the respondents (77.3%) have stated that the stroke affects the brain, although they are not familiar with Cardiopulmonary Resuscitation (CPR) techniques if the patient is in unconscious condition having breathing problem. Finally, the research concludes that stroke awareness status is satisfactory among the respondents and prioritizes that stroke-related course books must be included at the University level of Social Sciences disciplines, whereby the proper information and knowledge spreads within the students. It improves on identifying the actual symptoms and also encourages the patient's early admission to the hospital, which helps to decrease disability and other impairments via conducting proper methods.

Keywords: Exercise, Healthy Lifestyle Modification, Medical Emergency, Physiotherapy and Rehabilitation, Stroke Awareness and Treatment.

Introduction

A stroke is a medical emergency accompanying a serious life-threatening condition that happens when a blockage occurs to the part of the brain, blood vessel becomes narrowed or blocked, or when a blood vessel bursts and spills and, a sudden interruption of continuous blood flows into the brain (National Institute of Neurological Disorders and Stroke, 2023). Due to this, blood supply is cut off and it prevents blood and oxygen from reaching the brain's tissues. It is the medical condition in which poor blood flows to the brain and can damage the specific parts causing long term disability or even death of the patient and commonly known as a brain attack. So, stroke requires instant medical attention just like a heart attack. Thus, stroke is traditionally characterized as a neurological deficit and has global implications through a vascular cause appertaining to intense focal injury of the central nervous system including Cerebral Infarction, Intracerebral Hemorrhage, and Subarachnoid Hemorrhage, and is a major cause of disability and death worldwide but is not consistently defined in clinical practice, research, or in assessments of the epidemiology and public health (Sacco, et al., 2013).

Similarly, weakness of the face, arm, or leg, especially on one side of the body or sudden numbness, sudden confusion, sudden loss of vision or trouble seeing in one or both eyes, trouble in speaking or understanding, dizziness, sudden trouble on walking, loss of balance or coordination, sudden unusually severe headache with no known cause are the symptoms of stroke (Southwestern Medical Center, 2020). Sometimes, the warning symptoms may last only a few moments then, disappears and these signs indicates that someone is having a minor stroke or a Transient Ischemic Attack (National Institute of Neurological Disorders and Stroke & National Institutes of Health, 2020). Identically, stroke is the third leading cause

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after heart diseases and cancer and, a leading cause of morbidity and mortality across the world so Mansuri (2022) states "the prognosis and projection of cerebrovascular accidents depends on quick diagnosis of the type, the most critical part about approaching a stroke patient followed by appropriate and fast management". One-third part among the survivors of stroke undergo through permanent disabilities and it can be distinguished broadly as Hemorrhagic and Ischemic, which account for 20% and 80% of total respectively. In parallel, various types of stroke identification requires distinct guideline of management and to prevent from further damage to preserving neuronal function timely, the general population must be educated about methods of preventing stroke by making positive lifestyle changes (Alrabghi, et al., 2018). Furthermore, inclusion of 'silent' brain, retinal and spinal infarcts and silent Cerebral Hemorrhages are removing an association with clearly defined clinical symptoms that separate from historical precedent and tissue findings reminiscent of the scientific advances made by Wepfer, Bonet and Morgagni follows and, supports in the pace of history and the definition made by American Heart Association/American Stroke Association is related to the positivity in some extent (Coupland, Thapar, Qureshi, Jenkins, & Davies, 2017).

Likewise, the World Health Organization (2005) defines stroke as a focal (or at times global) neurological impairment of sudden onset, and lasting more than 24 hours (or leading to death), and of presumed vascular origin (Mustapha, Che Mohd Nassir, Aminuddin, Safri, & Ghazali, 2019) which includes three major stroke sub groups; Ischemic stroke - sudden occlusion of arteries supplying the brain (Indian Council of Medical Research - National Centre for Disease Informatics and Research, 2021), Intracerebral Hemorrhage - bleeding from one of the brain's arteries into the brain tissue and Subarachnoid Hemorrhage - arterial bleeding in the space between the two meninges, pia mater and arachnoidea. Alike it, a hospital based study conducted in Tribhuvan University Teaching Hospital by Bhatt, et al. (2008) concludes, physical inactivity, hypertension and smoking are the most common modifiable risk factors of stroke. Identically, lack of knowledge, negligence, not seeking health care and not complying with medical advice are the major risk factors and the occurrence of the stroke and were poorly controlled in the patients. So, the patients admitted to TUTH are inadequately controlled prior to the occurrence of stroke. Thus, patient of stroke in an underdeveloped country has the dilemma of accompanying in adequate medical services.

Objectives of the Study

The objective of the study was to explore stroke associated factors and to find out the opinion and awareness status among the Master's Degree students of Saraswati Multiple Campus.

Significance of the Research

Research on stroke helps to identify the problem and tries to discover the new findings in best possible way. Moreover, this research article fulfills the gap in knowledge by providing answers to those unrevealed topics and helps to change the working strategy of social sciences and healthcare professionals too. So, the significance of the research plays a vital role to

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introduce and to recognize the awareness status of the respondents. Additionally, research work is necessary consequent to campus students to know their perspective upon stroke and also supports to conduct special preventive treatment method in emergency cases.

Literature Review

Stroke is the medical exigency and patient should immediately admitted in hospital to emergency department before any pessimistic consequences and timey investigation, management, early mobilization and, appropriate treatment can reduce the risks. It has enormous impact on the public health of almost every nation whereas, becoming leading causes of death; is far more often disabling than fatal, and results costly measured in both health-care and lost productivity (Sacco, 1997). The world's most populous countries as well as Nepal lies in South Asia. The healthcare facility is poorly conducted in this region. So, this region is suffering from various diseases. Hence, a study conducted by Wasay, Khatri, & Kaul (2014) concludes that, in four South Asian countries: India, Pakistan, Sri Lanka and Bangladesh, strongly shows the medical and healthcare problems are entirely different than developed world. Therefore, the important area of focus are rapidly changing socioeconomic scenario, urbanization, changes in food habits, pollution and decrease in mortality from infectious diseases has made coronary artery disease, stroke and other infection too. In this manner, the high prevalence of traditional risk factors, poor personal hygiene, unhealthy behavior, several untreatable and infectious diseases are causes of stroke. An instant use of tissue plasminogen activator and access to tertiary stroke care is scarce and limited in developing countries. According to Sennfält, Norrving, Petersson, & Ullberg (2019) "at 5 years after stroke over 2 in 3 patients with Ischemic stroke, and over 3 in 4 patients with Intracerebral Hemorrhage, were dead or dependent and the robust long-term prognostic data of healthcare and research in stroke becomes reference for further development" and in spite of advances in stroke care, interminable prediction remains a cause for concern.

Correspondingly, a Korean Community Health Survey conducted in Korea in 2017 presents the overall percent of subjects with good knowledge of Stroke Warning Signs (>4 correct answers to the SWSs questionnaire) was 66.5% among the analyzation of 198,403 subjects. The knowledge level was highest in the middle-aged subjects. Likewise, excluding those with diabetes mellitus, the subjects with conventional and typical risk factors commonly had more knowledge about stroke warning signs but has the presence of conventional risk factors such as dyslipidemia and hypertension whereas, the knowledge about SWSs was not increased and have insufficient in the young subjects (Oh, Kim, Kim, & Kim, 2022). Moreover, stroke is second leading cause of mortality, represents the third leading cause of morbidity globally and is the cardinal cause of abiding adult disability and the fifth leading cause of death in the US, with approximately 795,000 stroke events in each year. Resultantly, the prevalence of stroke by 3.4 million people between 2012 to 2030 is expected to increase through coupled with the reduction in case fatality after stroke of the aging among the population. Consequently, the stroke risk factors are divided into non-modifiable such as; Transient Ischemic Attack and

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family history which cannot be changed or controlled whereas, modifiable factors; physical inactivity, cigarette smoking, excessive alcohol intake and obesity can be decreased, controlled, avoided or even prevented (Alharbi, et al., 2019). Similarly, in Nepal, Hemorrhagic stroke causes high mortality and Disability-Adjusted Life Years and almost of the burden of stroke is attributed to high blood pressure (Pyakurel, Bhattarai, Joshi, Koju, & Shrestha, 2021). Likewise, Chen, et al. (2022) finalized that "the stroke community patients' suboptimal awareness and treatment of hypertension, control of diabetes, and dyslipidemia are significant problems in China". Uniformly, the most common risk factors for community stroke patients in China are hypertension, dyslipidemia, and overweight or obesity (Han, Choi, Leung, Hui, & Leung, 2020). In addition, Shah, et al. (2013) confer that "hypertension, smoking, diabetes, sedentary lifestyle and cardiac problems have strong correlations and association with stroke and are the major risk factors. So, the prevention of these risk factors can lead to decrease in the incidence of stroke. B.M.I, diet, stress and family history of stroke had no significant association".

Furthermore, stroke and vascular dementia has unswerving correlation. A latest study conducted by Perry, et al. (2020) suggests that "COVID-19 may be an important modifier of the onset, characteristics and outcome of Acute Ischemic stroke" but Qureshi, et al. (2021) argues, "Acute Ischemic stroke was infrequent in patients with COVID-19 and usually occurs in the presence of other cardiovascular risk factors. The risk of discharge to destination other than home or death increased 2-fold with occurrence of Acute Ischemic stroke in patients with COVID-19". Additionally, Feigin, et al. (2022) confers, "the estimated global cost of stroke is over US$ 721 billion (0.66% of the global GDP)" and from 1990 to 2019, the burden (in terms of the absolute number of cases) increased substantially (70.0% increase in incident strokes, 43.0% deaths from stroke, 102.0% prevalent strokes, and 143.0% DALYs), with the bulk of the global stroke burden (86.0% of deaths and 89.0% of DALYs) residing in lower-income and lower-middle-income countries (World Stroke Organization, 2022). Correspondingly, Grefkes & Fink (2020) believes that "new treatment able strategies are needed to improve neurorehabilitation and the most critical driver of functional recovery post-stroke is neural reorganization". According to Matei, Camara, & Zhang (2021) "novel application of neuroprotective agents in combination with the latest methods of reperfusion provide a path to improved stroke intervention outcomes. New developments in recanalization therapy in combination with therapeutics evaluated in parallel animal models of disease will allow for novel, intra-arterial deployment of therapeutic agents over a vastly expanded therapeutic time window and with greater likelihood success. Although, the field of neuronal, endothelial, and glial protective therapies has seen numerous large trials, the application of therapies in the context of newly developed reperfusion strategies is still in its infancy".

Similarly, a study conducted by Deutschbein, Grittner, Schneider, & Schenk (2020) concludes that, follow-up care for stroke survivors is inadequate together with mostly self-organized by the patients themselves and there are no standard care programs for outpatient

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discharged from the hospital to support them with their multifaceted and heterogeneous health care needs in German health care system. As a consequences, the utilization rate of important health services of care coordination for a vulnerable patient population was increased, and the rate of hospital readmissions decreased. Like so, public campaigns principally focus on stroke signs risk, its factor knowledge, but the reason for urgent hospitalization is not correctly recognized by patient. Stroke treatment knowledge in patients proclaims to be poor so, public campaigns helps to focus on information on treatment options which ultimately contribute to reduce prehospital delay and onset-to-treatment-time (Faiz, Sundseth, Thommessen, & Rønning, 2018). In addition, inadequacy of public health status, physiotherapy, rehabilitation and Ayurvedic treatment, lack of awareness of stroke risk factors and management is unsatisfactory, and the interest of governments in the prevention of stroke is suboptimal and substandard.

Uniformly, the treatment of stroke is determined from scale and the scale for each ability is a number between 0 and 4 (National Institutes of Health, National Institute of Neurological Disorders and Stroke, 2003) where, 0 being normal functioning and 4 being completely impaired (National Institutes of Health, United States National Library of Medicine, 2022). The patient's National Institute of Health Stroke Scale score is calculated by adding the number (Waris, et al., 2023) for each element of the scale (Hoffman, 2017) and 42 is the highest score possible (Unites States National Library of Medicine, National Institutes of Health, 2023). In National Institute of Health Stroke Scale, the higher the score, the more impaired a stroke patient is (Zigna Genix, 2022). A stroke requires emergency care. Treatment depends after the categorization of Ischemic or Hemorrhagic in accordance with the time passed since the symptoms began and whether the patient have other medical conditions too. Similarly, both medicines and medical procedures are included on the treatment of an Ischemic Stroke or Transient Ischemic Attack. Tissue Plasminogen Activator (tPA) medicine remains as one of the main treatment for an Ischemic stroke (Montefiore Nyack, 2022) and it breaks up the blood clots that blocks blood flow to the brain. Likewise, several medical procedures are applied to open up blocked arteries (Lee & Sherrell, 2022) and restore blood flow to the brain (Rabin, 2010) among them, a thrombectomy is used which removes the clot from the blood vessel.

Moreover, Hemorrhagic stroke happens suddenly and grows worse quickly. Just as with an Ischemic stroke, getting treatment as quickly as possible is essential for a full recovery (National Institutes of Health, National Heart, Lung, and Blood Institute, 2022). The type of treatment a patient receives depends on (Vuolo, 2023) what part of the brain is bleeding. Additionally, for Hemorrhagic stroke the blood pressure medicine is used to lower the pressure and strain on blood vessels in the brain. Anticoagulant or blood-thinning medicines that led to bleeding and depending on the type of medicine the patient was taking, the doctor provides vitamin K which helps to stop bleeding. So, the medical procedures of Hemorrhagic stroke includes Aneurysm clipping- to block off the aneurysm from the blood vessels in the brain,

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Coil embolization- to block blood flow to or seal an aneurysm, Blood transfusions- replace blood that is lost through surgery or injury, Draining excess- fluid that collects in the brain (Veledora, 2021), Surgery or radiation- to remove or shrink an arteriovenous malformation, Surgery to remove pooled blood and Surgery to temporarily remove part of the skull, if the patient have a lot of swelling.

As follows, stroke related data is insufficient in the context of Nepal. The treatment procedure has not been perfectly discovered to date in the field of medicine and known as a costly treatment, whereas underdeveloped and developing countries have the burden of stroke, increasing by a gigantic degree than developed countries. Furthermore, Government of Nepal should focus on research expertise, awareness programs, and social welfare services to find out the specific data related to stroke which helps provide proper medical facilities to the citizens. So, the research prioritizes on care to cure procedure to prevent the stroke associated risks. Thus, interventions to reduce stroke burden is important and has more value in the developing countries and the aforementioned consequential impact plays a vital role in the issue of stroke at the global level.

Methodology

The study was conducted upon the students of Saraswati Multiple Campus, Kathmandu, Nepal, currently pursuing the degree, Master of Arts in English & Sociology in Second Semester and the data was collected through convenience sampling technique in 2022. Research methodology is a way to systematically solve the research problem (Bartley Research, 2022) in holistic manner using various steps that are generally adopted by a researcher in studying the research issue along with the relevant logic behind them and understood as a science of studying how research is done scientifically (Kothari C. R., 1990). First of all, researcher prepared the questionnaire and fixed the target population. 22 respondents has filled up the questionnaire and others not willing to participate in the research are excluded in data selection criteria. Data was taken through the respondent's having agegroup between 20 to 49 years old. To analyze the data in systematic process the researcher has used the software; IBM, SPSS 25. This research describes the data in exploratory form sequentially including the citation of various researchers on the issue of stroke and, both qualitative and quantitative research methods has applied in the duration of research. After the collection of data, variables were identified and analyzed according to the objectives of the research.

Data Presentation and Analysis

Data analyzation unit maintains structure and brings order of the collected data and known as the dominant communication tool in the field of research. Identifying risk factors associated with stroke helps the respondents to reduce the prehospital delay for the patients. Moreover, awareness of stroke is a dependent variable and socio- demographic factors such as; age, family history, gender and economic status are considered as independent variable. Furthermore, the analysis process of data collection is logically extended in the below portion.

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Table 1. Demographic status of respondents.

Gender?		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	9	40.9	40.9	40.9
	Female	13	59.1	59.1	100.0
	Total	22	100.0	100.0	
Age?		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20-29	13	59.1	59.1	59.1
	30-39	6	27.3	27.3	86.4
	40-49	3	13.6	13.6	100.0
	Total	22	100.0	100.0	
Income Source?		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agriculture	3	13.6	13.6	13.6
	Business	7	31.8	31.8	45.5
	Employee / Teacher	7	31.8	31.8	77.3
	Remittance / Foreign Employment	2	9.1	9.1	86.4
	Others	3	13.6	13.6	100.0
	Total	22	100.0	100.0	
Sufficiency of Monthly Income for Household Expenses?		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	8	36.4	36.4	36.4
	No	14	63.6	63.6	100.0
	Total	22	100.0	100.0	

Table 1 presents the respondents who have taken part to fill the questionnaire of the research on various entities. According to the table, the first portion is described in gender basis. Gender refers to socially constructed characteristics of men and women including social norms, behaviors, power structure, roles associated with being a man or woman and their relationship with each other, varies from society to society and changes over a time as a social construct (World Health Organization, 2022). Among 22 respondents, 9 are male and 13 are female. Inclusively, education plays a vital role to provide pathways towards gender equality and helps to spread the awareness about stroke. Likewise, the age of respondents is divided into three categories; 20-29, 30-39, 40-49 and the outcome result of the age group is cited in the table. In

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consonance with Ojha, Basak, Aglave, & Yadav (2020) "incidence of stroke increases with age, peaking in the highly productive age group of 46-65 years and the risk of any stroke was lower in younger women as compared to men, but elderly women (>65 years of age) were more prone to Ischemic stroke than elderly males. Intracerebral Hemorrhage occurred significantly more often in men than women under the age of 45 years and these findings have important implications for public health policy and sociocultural changes".

Similarly, the above table mentions the income source of the respondents. The data shows employment status of the students in several field. According to the table, 13.6 % students are involved in agriculture. Likewise, 31.8 %, 31.8 %, 9.1 % and 13.6 % students are involved in business, employee/teacher, remittance/foreign employment and in others sectors respectively. The earning, acknowledged as income source is directly related to the livelihood and health status of a person (Chaudhuri, Heisey, & Prottas, 2012). According to the analysis of data, 36.4 % of respondents have reported their monthly income is sufficient for household expenses whereas, 63.6 % respondents has concluded their monthly income is insufficient for fulfilling the household expenses and the data presents the income sufficiency and satisfaction is low on the respondents. For instance, as stated in the report of National Center for Health Statistics (2012), the greater income source leads to the lower likelihood of diseases and premature death. Similarly, labor income is the crucial factor for inequality in all countries and income inequality is also rising in the Group of Twenty (G20) countries in recent years and, becoming the growing concern. Thus, income source and the stroke has proportional relationship in the underdeveloped and developing countries.

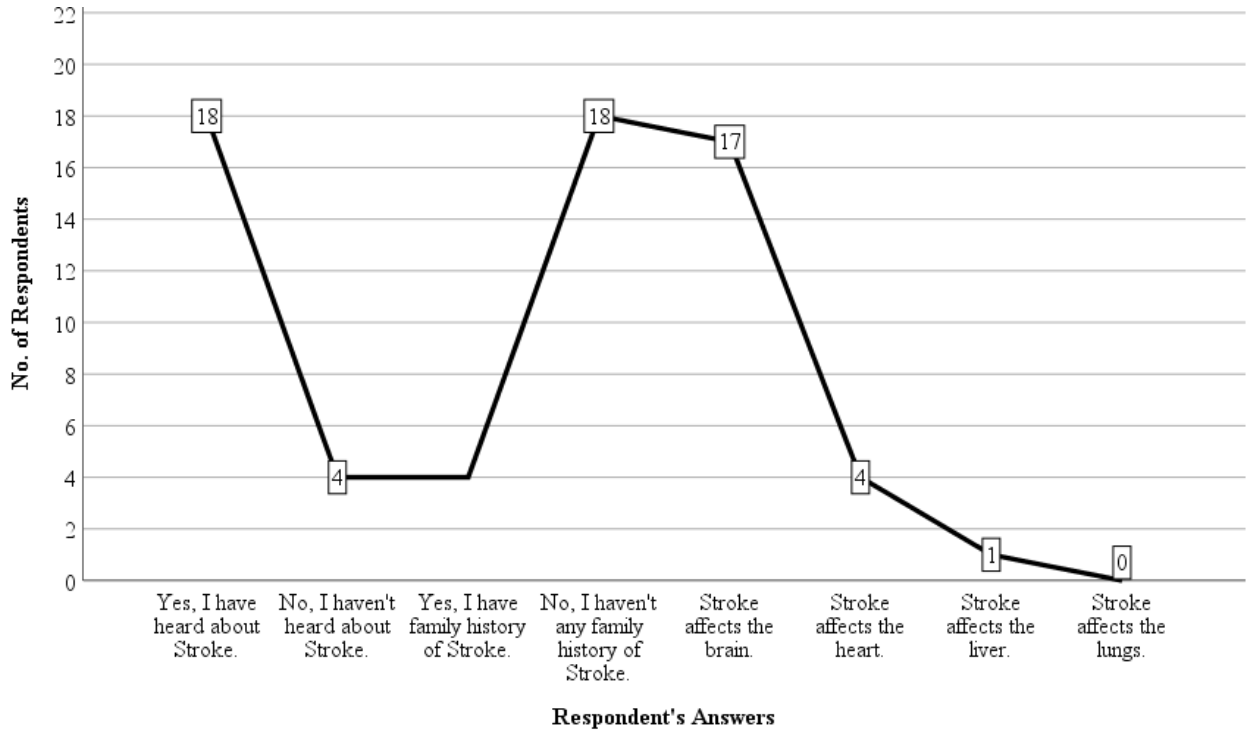

Fig. 1. Line chart on knowledge of stroke among respondents.

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Figure 1 presents the knowledge of stroke among respondents on different topics. According to the chart, 18 respondents have heard about the stroke whereas, 4 respondents haven't heard about stroke. The data indicates the present status of the respondents on an important health issues. Generally, the health consumption of stroke patients is larger than diseases such as diabetes, dyslipidemia, chronic obstructive pulmonary disease or coronary heart disease in financial terms.

Likewise, 4 respondents have the family history of stroke and 18 respondents haven't any family history of stroke respectively. Every stroke differs from each other, patient with similar strokes may be influenced in distinct ways and no one is able to predict how long it affects, what resorting to happen ahead or how much time the survivor will recover. Conforming to Pantea, Repanovici & Cocuz (2022) "the proper care of diabetes and its numerous consequences, including stroke and its neurologic complications, necessitates the fast identification of research findings in various types of medicines and their efficacy when applied to various patient groups, such as diabetic patients, whose recovery after a stroke is similar to that of a nondiabetic patient following hemodynamic stabilization, although it takes longer and has poorer outcomes".

Correspondingly, 17 respondents have stated that the stroke affects the brain, 4 respondents has informed stroke affects the heart and remaining 1 respondent notified stroke affects the liver. In this way, the data shows that some respondents has less knowledge on education and understanding about the stroke. Comparably, numerous stroke research is conducted in developed and high income countries although, much stroke occurs in developing and underdeveloped countries alongside becoming burden issue so, building stroke research capacity in developing countries is an urgent need to improve (Pandian, Liu, Gandhi, & Lindley, 2018).

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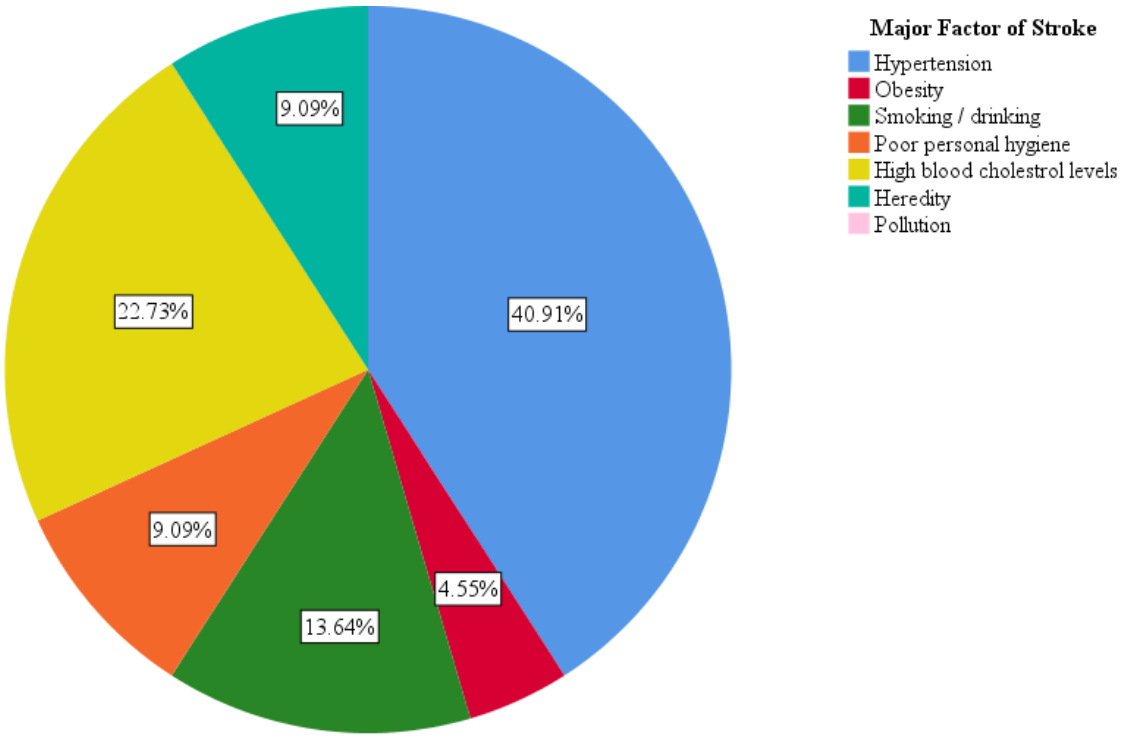

Fig. 2. Pie chart count of which of the following reason is the major factor of stroke in your opinion?

Figure 2 presents the opinion of the respondents on the major factor of stroke. In consonance with the pie chart, 40.91 % respondents believes hypertension is the major factor of stroke. Correspondingly, 4.55 %, 13.64 %, 9.09 %, 22.73 % and 9.09 % respondents believes that obesity, smoking/drinking alcohol, poor personal hygiene, high blood cholesterol levels and heredity are the major factor of stroke respectively. In such manner, the data presents majority of the respondents believes that hypertension is the vital factor of stroke. Likewise, the most prevailing risk factor of stroke was hypertension emulated by dyslipidemia and then smoking with excessive occurrence of rheumatic heart diseases due to lowered living conditions. Hypertension, age, cardio-embolic risk factors, and carotid stenosis $\geq 50\%$ have adverse impact on stroke disability and seriousness (Soliman, Oraby, Fathy, & Essam, 2018). Identically, a research conducted by Maskey, Parajuli, & Kohli (2011) shows "significant risk factors in order of descending order were hypertension, cigarette smoking, left ventricular hypertrophy, alcohol use, atrial fibrillation and elevated triglycerides".

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Table 2. Symptoms of stroke and contribution of the respondents in the event.

Please select the danger signs/ symptoms of stroke that you think are correct?		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Sudden loss of eyesight	3	13.6	13.6	13.6
	Sudden weakness / tingling in the limbs	3	13.6	13.6	27.3
	Sudden headache	4	18.2	18.2	45.5
	Sudden fainting	6	27.3	27.3	72.7
	Sudden dizziness	3	13.6	13.6	86.4
	Cold hands and feet	1	4.5	4.5	90.9
	Trouble in speaking	2	9.1	9.1	100.0
	Total	22	100.0	100.0	
How can you contribute to the patient in the event of a stroke?		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Take the patient to the hospital	19	86.4	86.4	86.4
	Note the stroke time and provide Cardiopulmonary Resuscitation (CPR) if needed	2	9.1	9.1	95.5
	Allow patient to heal himself without doing nothing	1	4.5	4.5	100.0
	Total	22	100.0	100.0	

The above table mentions the danger signs/symptoms of stroke, contribution of the respondents in the event and presents the opinions towards the stroke. In accord with the table 13.6 % respondents believes sudden loss of eyesight is the signs of stroke whereas, 13.6 %, 18.2 %, 27.3 %, 13.6 %, 4.5 % and 9.1 % of respondents believes sudden weakness/tingling in the limbs, sudden headache, sudden fainting, sudden dizziness, cold hands and feet and trouble in speaking are the major signs and symptoms of the stroke respectively. As a consequence, the opinion level of the respondents varies from each other. Alike it, an investigation carried by Fekadu, Chelkeba, & Kebede (2019) exhibits, "the most common risk factor identified was hypertension (75.9%) followed by family history (33.6%), alcohol intake (22.4%), smoking (17.2%) and heart failure (17.2%) and, the most common clinical presentation was headache complained by 75.0% of the patients followed by aphasia (60.3%) and hemiparesis (53.4%)

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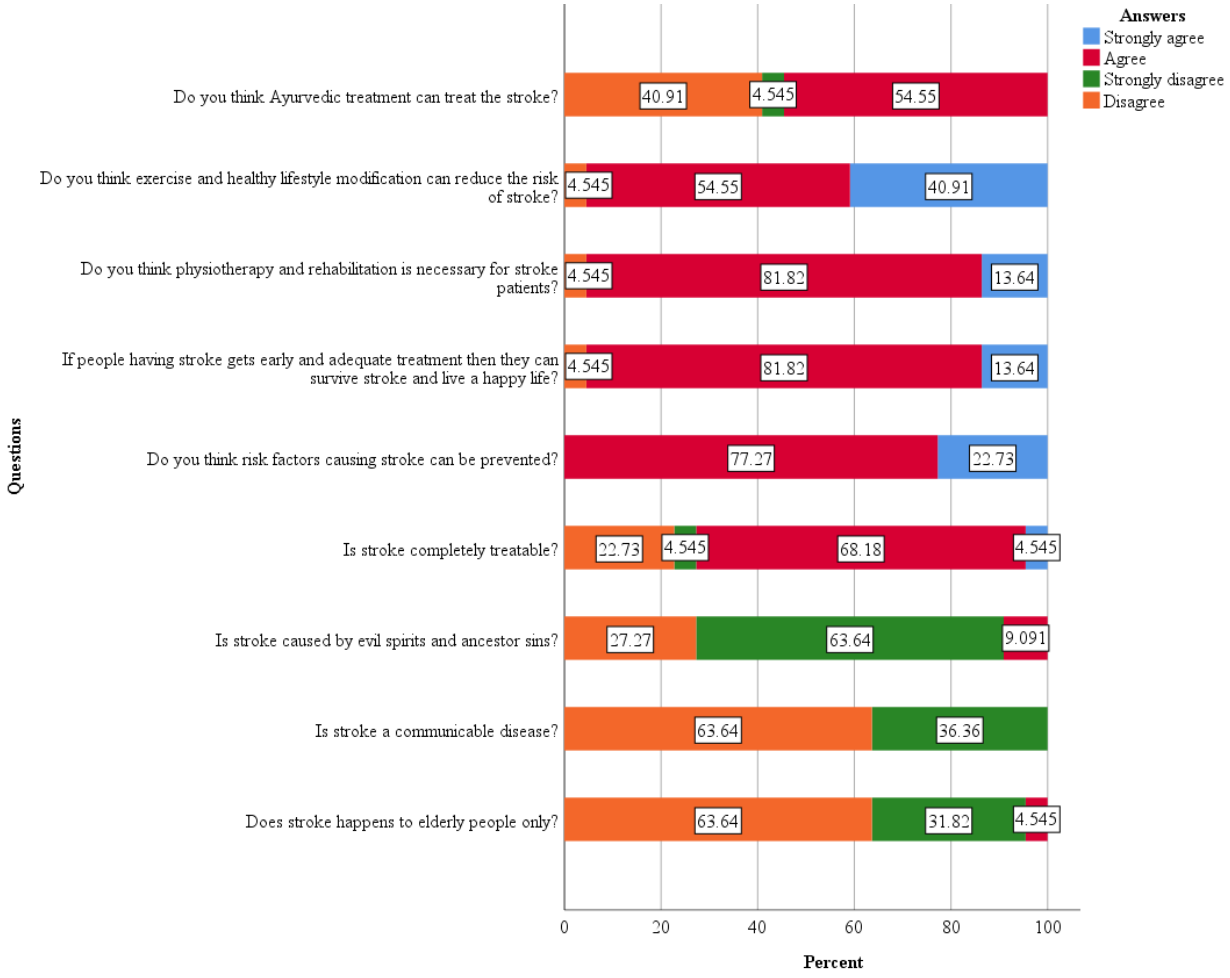
then, atrial fibrillation was the independent predictor of Hemorrhagic stroke". Uniformly, Kothari, et al. (1997) concludes, almost 40% of patients admitted in hospital with a possible signs, symptoms did not know the risk factor of a stroke. Furthermore, stroke treatment knowledge in patient is deficient and education is needed to aggrandize awareness of the warning symptoms and risk factors of stroke (Patnaik, Sahoo, & Sahu, 2015).

Likewise, according to the table, 86.4 % of respondents takes the patient to the hospital, 9.1 % respondents notes the stroke time and provide Cardiopulmonary Resuscitation (CPR) if needed and 4.5 % of the respondents allows patient to heal himself without doing nothing by contributing the patient in the event of stroke. The data shows that the respondents have a great knowledge for taking patient to the hospital but in case of emergency, knowledge of providing CPR technique is lowly distinguished. However, Soto-Cámara, et al. (2020) rendered the information that, "understanding the risk factors of a stroke including encouraging behavioral changes may ensure that the patient is aware of their own circumstances and following a gradual circumspection treatment programs can intended for the prevention of recurring and new cases" and warning signs recognition of stroke on how to react in a possible stroke event may reduce the time delay to admission in hospital and increase the number of patients who could be prospectors to receiving endovascular revascularization or fibrinolytic therapy.



Nepal Journal of Multidisciplinary Research (NJMR)
Vol. 6, No. 2, June 2023. Pages: 36-57
ISSN: 2645-8470 (Print), ISSN: 2705-4691 (Online)
DOI: https://doi.org/10.3126/njmr.v6i2.57198

Fig. 3. Stacked relative bar chart on questions related to stroke.

Figure 3 presents the major concern of the research. The researcher has collected the data in agreed and disagreed forms from respondents and the motive of the research is to provide the answer of these questions for the contribution of stroke awareness to an evolving level. According to the research, respondents have own perception regarding the various issues about stroke. Correspondingly, 63.6 % of respondents disagree that stroke happens to elderly people only and like as it, 63.6 % of respondents disagree that stroke as a communicable disease. As stated by Roy-O'Reilly & McCullough (2018) age, sex and growth of the population give rise in the absolute number of strokes, especially in the senior citizens, have a complex and interactive effect on pathophysiology and Ischemic stroke risk. Elderly aging is the strongest non-modifiable risk factor for Ischemic stroke, and old aged stroke patients have higher mortality, morbidity and poorer functional recovery than their young counterparts. Literally, the influence of patient sex in Ischemic stroke can modify by age. So, the burden of Ischemic stroke is higher in men in early life, but for women stroke becomes more common and debilitating in elderly populations.

Similarly, 68.2 % of respondents agree on stroke is completely treatable and 77.3 % agree on risk factors causing stroke can be prevented whereas, using a population-based registry, stroke cases such as; Ischemic strokes, spontaneous Intracerebral Hemorrhages, or undetermined strokes were prospectively identified between 1987- 2015 in Dijon, France (Béjot, et al., 2019). Likewise, 81.8 % agree and 4.5 % disagree on if people having stroke gets early and adequate treatment then they can survive stroke and live a happy life. Correspondingly, risk factors and treatment of stroke depends on the specific pathogenesis while it is a heterogeneous syndrome and can be categorized as modifiable and non-modifiable. Identically, risk factors for both Ischemic and Hemorrhagic stroke includes age, sex, and race/ethnicity as non-modifiable risk while hypertension, smoking, diet, and physical inactivity are commonly reported as modifiable risk factors. In parallel, inflammatory disorders, infection, pollution, and cardiac atrial disorders independent of atrial fibrillation are the significant risk factors and triggers of stroke. Likewise, single gene disorder, hereditary disorder is a primary manifestation while stroke prevention is more focused towards modifiable risk factors. Healthy lifestyle modification reduces stroke and cardiovascular diseases too. Comparably, the crucial prevention strategies includes the identifying and treating of hypertension and diabetes and other medical conditions that increases stroke risk (Boehme, Esenwa, & Elkind, 2017).

Consequently, 13.6 % of respondents strongly agree that physiotherapy and rehabilitation is necessary for stroke patients and 4.5 % disagree on this topic. Besides it, the physiotherapy and rehabilitation conducted by therapeutic team shows that the evidence is not assured and easy to evaluate, despite it, majority of the evidence, however, does imply that stroke patients can benefit from rehabilitation and physiotherapy. Additionally, these

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treatments methods can be small but may become drastically mean of difference for some patients. Yet, the researchers are not able to find the proper physiotherapy and rehabilitation despite it, the easiest and suitable physical activity, therapies and available approaches which could fit for most patients can imply to stroke patients also (Ernst, 1990). Likewise, 54.5 % of respondents agree that exercise and healthy lifestyle modification can reduce the risk of stroke as presented in the table. For good measure, 54.5 % of respondents agree and 40.9 % of respondents disagree on Ayurvedic treatment can treat the specific conditions of stroke. Furthermore, a study conducted by Harini, et al. (2019) prioritizes; the safety profiles of classical Ayurveda and conservative western biomedicine in Acute Ischemic stroke are similar and utilization of Ayurveda massage in post stroke patients with flaccidity promotes faster standing with minimal support including assistance and lead to less need for antispastic drugs at discharge (Sankaran, Kamath, Nambiar, & Kumard, 2019). Hence, respondents has provided the data according to their intellectual level.

Conclusion

Stroke is a medical emergency and one of the leading cause of physical disability and death in the developing countries. The symptoms of stroke is different than other disease and the general population is unaware of its signs and cannot able to distinguish the major symptoms. The data in this research presents that the overall awareness status of stroke is satisfactory in the respondents and the knowledge in event of stroke to contribute to the patient is strong although, the respondents are not familiar with CPR techniques. According to the research, respondents believes hypertension is the major factor of stroke and also agrees that early prevention strategies, exercise and healthy lifestyle modification can reduce the risk. The burden of stroke is increasing in underdeveloped and in developing countries but the availability of treatment procedure is in few numbers. Identically, the major types of stroke includes: Ischemic stroke, Intracerebral Hemorrhage and Subarachnoid Hemorrhage (Agyemang, et al., 2014). Namely the studies related to stroke shows that the actual treatment method is not intervened till now in the field of medicine but the latest technology such as Magnetic Resonance Imaging (MRI) and Computed Tomography Scan (CT scan) helps to find the status of Ischemic stroke and also succors to diagnosis the treatment in acute phase in some extent.

However, the governments has not focused in the field of stroke in underdeveloped countries whereas, the study lacks a lot and the public health policy is also not strong to prevent the diseases. So, providing the proper knowledge of stroke to the citizens is challenging part but public campaigns, trainings, programs related to stroke and the mass media can disseminate the knowledge on early signs/symptoms, prevention and treatment strategies. Therefore, the government should include the stroke related course book in University level of the study besides than, medical field in pragmatic form through which, the students of Social Sciences also gets proper information whereby, knowledge spreads. Thus, it ultimately simplifies to identify the actual symptoms and, also encourages to making the patient early admission in the hospital which helps to decreases the disability and other malfunction in proper manner.

Thereupon, treatment of stroke is too costly in Nepal so, the government should apply social welfare program, genuine health insurance policy and different facilities to the citizens. It helps to provide the best medical and financial facility facilely for poor patients and their family. Hence, appointment of experts in decisive field such as, Ministries, organizations, universities, hospitals and medical research center facilitates to increase implementation of genuine plans and policies which helps to change the overall life status of the citizens in positive approach.

Acknowledgements

We are thankful to all the students of Saraswati Multiple Campus (Master of Arts in English & Sociology, 1st Year / 2nd Semester, 2021 Batch.), Kathmandu, Nepal who has helped to fill the questionnaire to make this research paper more authentic and reliable by providing their valuable time. Furthermore, we would also like to extend the deepest gratitude to the Department of English & Sociology of Saraswati Multiple Campus, Tribhuvan University for allowing us to conduct the research.

Author Contributions

Ashmita conceptualized and prepared the questionnaire of research. Supriya collected the data from respondents. Anup analyzed the data, prepared the manuscript, conducted the proofreading and all authors reviewed the research work in genuine manner.

Conflict of Interests

The authors declares no conflict of interests, we clarify this research is original work and also have agreed with the strategy of whole research process.

Data Availability Statement

The data sharing that support the findings of this study are available from the corresponding author, upon reasonable request for the academic purpose.

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