The Research of Medical Science Review

Received: 22 October, 2024
Accepted: 20 November, 2024
Published: 27 November, 2024

ISSN: 3007-1208 | 3007-1216
Volume 2, Issue 3, 2024

THE ASSOCIATION OF PHYSIOLOGICAL STRESS AND RELATED QUALITY OF LIFE AMONG STROKE AND HYPERTENSION PATIENTS IN DISTRICT LAYYAH, PUNJAB, PAKISTAN.

Saman Zahra[*1], Muhammad Mubeen[2], Maliha Ghaffar[3]

[*1,2,3]*University of Okara, Okara 56310, Pakistan*

[*1]saman.zahra@uo.edu.pk

ABSTRACT

Hypertension is the main cause of cerebral small vessel disease, which results in cognitive impairment and stroke. Long-term stroke risk (that appears months or years after starting or stopping the medicine) is 4-5 times higher than the short-term risk (temporary medical coverage). It is the most significant risk factor for various neurological issues. Additionally, the risk of stroke is significant in the presence of hypertension, A systematic review design, with a sample size of 136 participants. The study duration was set at 6 months, conducted in District Layyah, PUNJAB, PAKISTAN. Data was collected using questionnaires. Descriptive analysis was performed using SPSS version 22, In order to designate the study inhabitants in terms of sex, age, stress level, and quality of life, frequency tables were created. Using Spear man correlation coefficient, each dimension of eminence of life was connected with the constant adaptable physiological stress. In this study T test and correlation of each questionnaire was applied to check the significance p value, Compared to individuals with high blood pressure, QOL is more liable to be impacted by the disability caused by the stroke itself and less by physiological depress and socio-demographic variables in individuals with hypertension and stroke. The specific features of people with mild to moderate stroke may be significant to consider when devising comprehensive, focused therapies meant to maximize recovery and enhance HRQOL.

Keywords: *Cerebral small vessel disease, Health related quality of life, Cerebro vascular accident, Quality of life, World health organization, American Heart Association.*

INTRODUCTION

Hypertension is the main cause of cerebral small vessel disease (CSVD), which results in cognitive impairment and stroke. Long-term stroke risk is 4-5 times higher than the short-term risk (1). It is the most significant risk factor for various neurological issues. Additionally, the risk of stroke is significant in the presence of hypertension (2). Therefore, the effect of hypertension on cerebral circulation is crucial to the field of stroke research. Even though decreasing in the West, it is likely to increase in Asia. In a similar vein, hypertension affects one in three people over the age of 45. Contrary to expectations, a large percentage of these individuals are ignorant of their diagnosis. This is made even more difficult by the circumstance that the majority of identified patients have abandoned hypertension as a consequence of poor patient compliance and inadequate medical expertise (3). Stroke is a medicinal situation that happens while the blood resource to the brain is episodic owed to a blocked artery or a cracked blood vessel. It is a foremost reason of decease and disability universal and is a major source of psychological, social, and physical stress for the affected individual and their

families (3, 4). Physiological stress is the body's reaction to a physical or psychological demand that affects our physical, mental, and emotional well-being. Physiological stress can be caused by a variability of aspects, including illness, injury, lifestyle, or environmental changes. In the case of stroke, physiological stress can be caused by the physical effects of the stroke itself, or by the psychological and social stress of dealing with the effects of the stroke on the patient and their family (5). A stroke refers to a therapeutic form that arises in the result of hemoglobin supply to the brain is intervallic, principal to a deficiency of O2 and nutrients to brain cells. This disruption can be initiated by a obstructed or narrowed capillaries (ischemic stroke) or the damage of a capillaries (hemorrhagic stroke). Strokes are considered a medical emergency as they container result in brain damage and have serious consequences, including physical disabilities, cognitive impairments, and even death (6).

Ischemic strokes, which explanation for around 87% of all stroke cases, are habitually initiated by a blood lump blocking an artery foremost to the brain. Hemorrhagic strokes, on the former hand, happen when a plasma vessel in the brain breaches and causes bleeding into the surrounding tissue (7).Several risk factors can contribute to the occurrence of a stroke, including hypertension, smoking, diabetes, high cholesterol, obesity, a sedentary lifestyle, and a family history of stroke. Age and gender also play a role, with the risk increasing with age and men being more susceptible to stroke compared to premenopausal women (8).Early recognition and prompt medical attention are crucial for minimizing the damage caused by a stroke. Common indications of a stroke comprise abrupt feebleness or impassiveness on one adjacent of the body, exertion speaking or empathetic speech, sudden confusion or trouble with vision, giddiness or loss of balance, and unembellished headache (9).

Stroke and hypertension are two medical conditions that pose significant health risks and have a profound impact on individuals' lives. This paragraph aims to provide a brief overview of stroke and hypertension, highlighting their prevalence, risk factors, and potential consequences (10) Hypertension, commonly referred to as high blood pressure, is a chronic medical condition characterized by persistently elevated blood pressure levels. It is a major risk factor for stroke, heart disease, and other cardiovascular complications (11). Uncontrolled high blood pressure puts excessive strain on blood vessels, leading to damage to the arteries and an increased risk of developing atherosclerosis, a condition where fatty pledges form up in the arterial walls, further constricting them and impeding blood flow (12).

Additionally, certain demographic factors such as ethnicity and socioeconomic status can influence the prevalence and management of stroke and hypertension (13).The consequences of stroke and hypertension can be severe and life-altering. Stroke survivors often experience physical impairments, such as paralysis or paleness on one side of the figure, speech difficulties, and cognitive deficits. They may require extensive rehabilitation and long-term care to regain functional independence. Moreover, strokes can have significant emotional and psychological effects, leading to anxiety, depression, and a reduced quality of life (14).

Stroke is a major source of physical and psychological stress for those affected and their families. Physiological stress is the body's reaction to physical or psychological demands and can be caused by a variety of factors, including illness, injury, lifestyle, or environmental changes (15). In the case of stroke, physiological stress can be caused by the physical effects of the stroke itself, or by the psychological and social stress of dealing with the effects of the stroke on the patient and their family. Types of physiological stress related to stroke include acute stress, chronic stress, post-stroke anxiety, post-stroke depression, and post-stroke fatigue. It is important to recognize and manage the physiological stress associated with stroke to reduce the risk of further physical and mental health issues (16).

Health-related quality of life (HRQOL) is a broad thought that focuses on how a person's physical and psychological well-being affects their daily life. It is the quality of life that is impacted by physical health, mental health, emotional well-being, and social connections (17). HRQOL is an imperative indicator of a person's overall well-being and can be used to assess the effectiveness of treatments and interventions. HRQOL is resolute by a variability of factors such as physical health,

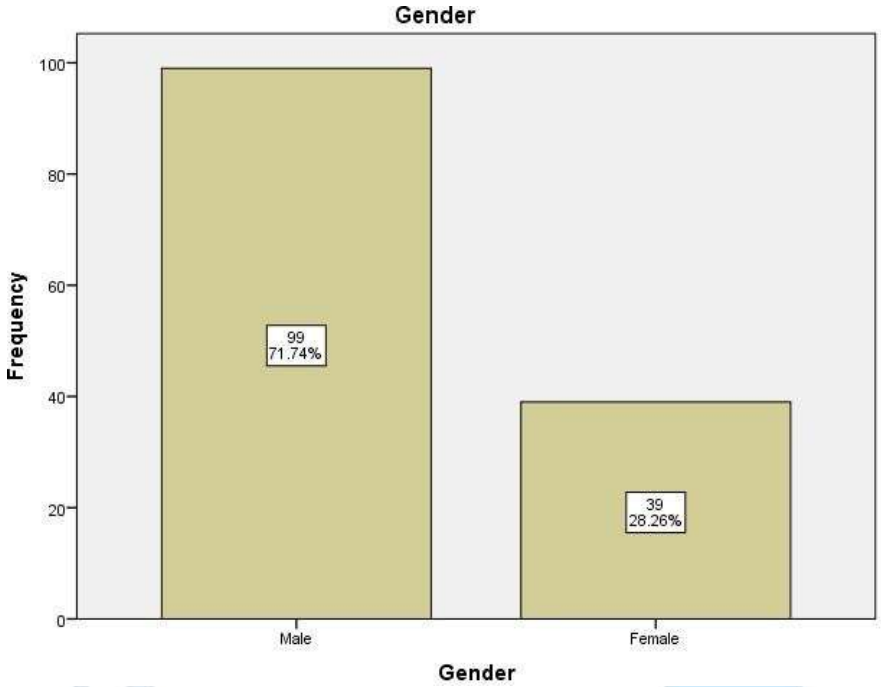
mental health, lifestyle, access to healthcare services, and social environment. Physical health is an important factor in HRQOL, as it can affect a person's ability to participate in activities, work, and social life (18). Mental health is also important because it can affect a person's capability to function and enjoy life. Lifestyle influences such as regime, exercise, and smoking can also influence HRQOL. Access to healthcare services plays a critical role in HRQOL, as it can improve the quality of care a person receives (19). The social environment can also affect HRQOL, as it can provide support, resources, and opportunities for social interaction. HRQOL can be measured using a variety of methods, such as surveys, interviews, and physical exams. Surveys are a popular method of measuring HRQOL, as they allow people to express their own opinions on various aspects of their health. Interviews are also used to assess HRQOL, as they can provide insight into a person's perception of their health. Physical exams can also provide information about a person's overall health (20).

Quality of life is a subjective measure that is used to evaluate the general well- being of persons and civilizations. It is a broad notion that incorporates various aspects of life, such as physical health, economic stability, environmental quality, personal relationships, safety, security, and social connections (21). Quality of life is often used to gauge the success of individuals, communities, and nations. Quality of life is based on a variety of factors, including access to health care, education, job opportunities, and a safe and secure environment. It is also related to factors such as income level, access to social services, and overall satisfaction with life (22). Quality of life is often used to measure the success of different societies, as it can be seen as a reflection of the overall standard of living. Good quality of life is dependent on a range of things, from access to basic goods and services to the quality of the environment. For example, a clean and safe environment is essential for people's physical and mental health, and a clean water supply is important for health, hygiene, and overall quality of life. In addition, access to education, job opportunities, and financial stability are all important components (23).

Quality of life is also affected by social connections. People need to feel connected to a community and have access to social support. This includes having strong family relationships and access to social networks such as friends, neighbors, and colleagues. Communal networks are important for emotional well-being, as they offer a intellect of belonging and determination (24). Quality of life is often measured through surveys, interviews, and other research methods. Quality of life surveys ask people to rate their overall satisfaction with various aspects of their life, such as health, work, leisure, and family. Interviews provide a more qualitative approach to assessing the quality of life, as they allow people to discuss their experiences in more detail (25). Quality of life is an important concept that is used to measure the success of different societies. It is based on a variety of factors, from access to basic needs to social connections, and is often measured through surveys and interviews. Good quality of life is essential for individuals' and communities' physical, mental, and emotional well-being (26).

Hypertension, also recognized as a complaint in which the pressure of the blood curving through the arteries is abnormally great. It is a chief danger factor for heart attack, stroke, and other serious health problems. The most common symptom of hypertension is high blood pressure, but there are often no symptoms until the condition has advanced. If hypertension is left untreated, it can lead to serious complications such as heart attack, stroke, and kidney failure (27). The meticulous reason of hypertension is not known, but definite risk influences can rise a person's chances of developing the condition. These risk factors include age, ethnicity, family history, obesity, smoking, and excessive alcohol consumption. Other aspects that can subsidize to high blood pressure include stress, lack of exercise, and certain medications (28).Commonly used medications for hypertension include diuretics, beta-blockers, ACE inhibitors, and calcium channel blockers. In some cases, lifestyle changes and medications are not enough to control hypertension. In these cases, surgery may be recommended. Procedures such as angioplasty and stenting can be used to widen the arteries and reduce pressure (29). Many papers approved the link between different kind of conditions especially among neurological. High blood pressure is a root cause to increase pressure on heart valves as well leading to distraction in

pumping of blood via different medical problems oxygen supply reduce to blood which lead to brain hemorrhage (30). Hypertension is a thoughtful condition that can chief to solemn health snags if left unprocessed. It is imperative to kind lifestyle variations to diminish the risk of evolving hypertension, monitor blood pressure regularly, and seek medical advice if necessary. With the right treatment, it is possible to control hypertension and reduce the risk of serious complications (31).



Objective:

This research study aims to investigate the association between physiological stress and related quality of life (QoL) among stroke and hypertension patients in Layyah.

Method and Material

The study design used for this literature was systematic review. Total sample size was N=136 calculated through open epi tool. The study duration was 6 months and conducted in Layyah. Non probability Purposive Sampling was used.

Data was collected via using questionnaire (stroke awareness questionnaire, SF12, WHOQOL questionnaire) which are composed of demographic, family history, factors, warnings and risks. Content validity index was calculated and proper tests (parametric and non-parametric) was applied according to the data. Data was analyzed descriptively by mean, median, mode and graphically presented using bar chart. Data was analyzed by using SPSS version 22. Hypertensive patients and Stroke patients of Age 30-60. Both male and female were included. Age other than 30-60 with other diseases were excluded.

Results:

In order to designate the study inhabitants in terms of sex, age, stress level, and quality of life, frequency tables were created. The T-test was used to determine whether differences between groups were statistically significant. Using Spear man correlation coefficient, each dimension of eminence of life was connected with the constant adaptable physiological stress. The mean age of study population were 46.55 (SD 8.48) while 71.74% were male and 28.26% were female included in this study (Figure 1).

Figure 1: Represents the frequency of gender

However 54% were less than high school education 50% were belong to high school. Males (71.74%) were only marginally more recurrent than females in the study people (28.26%).The patient were 30-60 year old. Patient from 40-60 are

greater in numbers. Patients aged 60 years old or younger were the least group in the study. The dissemination of educational qualifications and of average monthly proceeds stratified by disease status is presented in Table 1. The level of education was suggestively dissimilar between patients. Patients with hypertension and stroke presented without a formal qualification. Most of the patient are less then college education(less then high school 54, high school 50).

Table 1. Frequency, mean and standard deviation of variable Age, Gender,Marital status, Height, Weight and level of education

Variables	Frequency	Mean	Std. Deviation
Gender	138	1.2826	.45191
Age	138	46.5580	8.48530
Marital status	138	2.1812	.73728
Height	138	5.9109	3.70836
Weight	138	63.8696	10.06970
Level of education	138	1.8913	.86019

Majority of pt. Having family diseases like diabetes (44.2%) and depression (60.1%) causing serious effects on QOL and leads to high blood pressure that reaches up to more than half of the population with 65.2%. A number of middle age person do not have any healthy physical routine. In old age person anxiety is also playing a key role to damage human health, according to study it found in 62.2% patients. In this study T test and correlation of each questionnaire was applied to check the significance p value.

Table2. Demonstrate the frequency and percentage of influences

Variables	Factors	Frequency	Percentage
High blood pressure influences the risk of having astroke	increase the risk	97	70.3
	reduce the risk	14	10.1
	no effects on risk	20	14.5
	don't know	7	5.1
Arthritis influences the risk of having astroke	increase the risk	13	9.4
	reduce the risk	39	28.3
	no effects on risk	29	21.0
	don't know	57	41.3
Atrial fibrillation influences the risk of having a stroke	increase the risk	13	9.4
	reduce the risk	8	5.8
	no effects on risk	57	41.3
	don't know	60	43.5
Diabetes mellitus influences the risk of having a stroke	increase the risk	40	29.0
	reduce the risk	27	19.6
	no effects on risk	30	21.7
	don't know	41	29.7
Previous	increase the risk	56	40.6

The tables offer a range of data that give an overview of perceptions and knowledge of various health conditions as they relate to stroke risk and how health status is related to the level of knowledge regarding stroke risk factors. The majority responded that high blood pressure increases the stroke risk. A very small number, 10.1%t, thought that it reduces the risk, while 14.5% said it has no effect, and another 5.1 percent were not sure. In contrast, there was less homogeneity in perception of arthritis as increasing stroke risk, with only 9.4% perceiving this to be the

case, while a greater proportion believed that it decreased risk, 28.3%; had no effect, 21.0%; or were unsure, 41.3%. Perception of atrial fibrillation was similarly divided, with only 9.4% perceiving it as increasing stroke risk, with 41.3% believing it had no effect and 43.5% who were unsure. For diabetes mellitus, 29.0% correctly identified it as a risk factor, but 19.6% thought this reduced the risk, while 21.7% felt it made no difference, and 29.7% did not know.

The table also indicate a variable response in relation to family history and its relationship to conditions which cause stroke. For instance, 65.2% of those responding indicated that they had a family history of high blood pressure, while 21.7% reported no history of the condition, and 13.0% were not sure. These trends were similarly replicated for conditions such as depression, high blood cholesterol, heart attack, severe headaches, stroke/TIA, atrial fibrillation, anxiety, congestive heart failure, sleep apnea, and chest pain. A high percentage of the respondents either did not know or were not sure if these conditions existed in their family history.

The correlation analysis in Table 4 shows that there are significant relationships among the variables of medical conditions, quality of life measures as represented by the SF12 and WHO QOL BREF, and stroke risk factor knowledge. The interesting correlations for those with high blood pressure appear to be in the SF12 scores vs. WHO QOL BREF scores and stroke risk factor knowledge, indicating some interplay of those measures of health related to stroke awareness. It represents the very important role that both personal and family histories of medicine play in properly assessing and managing the risk of stroke.

Table3. Demonstrate the frequency and percentage of family history

Variables	Factors	Frequency	Percentage
Family Historyhigh BP	Yes	90	65.2
	No	30	21.7
	Don’t know	18	13.0
Family Historydepression	Yes	79	57.2
	No	50	36.2
	Don’t know	9	6.5
Family History high blood cholesterol	Yes	62	44.9
	No	47	34.1
	Don’t know	28	20.3
Family Historyheart attack	Yes	53	38.4
	No	56	40.6
	Don’t know	29	21.0
Family History severe headache	Yes	77	55.8
	No	39	28.3
	Don’t know	22	15.9
Family Historystroke/TIA	Yes	24	17.4
	No	78	56.5
	Don’t know	36	26.1
Family History atrial fibrillation	Yes	63	45.7
	No	43	31.2
	Don’t know	32	23.2
Family Historyanxiety	Yes	18	13.0
	No	37	26.8
	Don’t know	83	60.1
Family History congestive heartfailure	Yes	48	34.8
	No	53	38.4

	Don’t know	37	26.8
Family Historysleep apnea	Yes	45	32.6
	No	57	41.3
	Don’t know	36	26.1
Family Historychest pain	Yes	33	23.9
	No	42	30.4
	Don’t know	63	45.7

Table4. Correlation of SF12, WHO QOL and stroke risk factor by the use of Ttest

Medical Problem high blood pressure		**SF 12**	**WHO QOL BREF**	**Stroke risk factor knowledge**
Yes	SF 12	Sig.(2-tailed)	0.016	.018
	WHO QOL BREF	.018		0.02
	Stroke risk		.061	
	Factor knowledge and perception questionnaire	0.013		
No	SF 12	Sig.(2-tailed)		.321
	WHO QOL BREF	.195		1
	Stroke risk factor knowledge and perception questionnaire	.165	.026	
Don’t know	SF 12	Sig.(2-tailed)		.826
	WHO QOL BREF	0.165		1
	Stroke risk factor knowledge, perception questionnaire	.474	.602	

Discussion

In this study, we evaluated the relationship between physiological stress and patients' quality of life who had either hypertension alone or hypertension combined with stroke. In comparison to people who merely have hypertension, people who have both hypertension and a stroke typically report a much worse quality of life. In patients with hypertension, all indicators of quality of life were significantly correlated with physiological stress, according to our analyses of co variance. However, in these multivariate models, individuals with both hypertension and stroke did not exhibit a significant effect of physiological stress on the various quality of life dimensions. The finding that people who experience both hypertension and stroke have a poorer quality of life than those who just have hypertension has been supported by a large number of subsequent research. The crippling consequences of stroke are mostly to blame for this disparity (32). In a larger perspective, study found that chronic medical disorders, such hypertension and stroke, had a considerable impact on quality of life in terms of health (33). The incapacitating effects of stroke, in particular, may still have an effect on a person's quality of life a year after the stroke episode (34). However, it's critical to recognize any bias that may exist when evaluating hypertension and quality of life. According to previous studies hypertension individuals frequently undervalue the impression of hypertension on their quality of life (35). Another

study concluded that Persons with hypertension have somewhat subordinate quality of life than those with normotensive. Advance study is required to determine the impression of high blood pressure and hypertension awareness (36).The findings showed that, with the exception of cardiovascular disorders, the majority of medical comorbidities did not statistically significantly correlate with poorer HR-QoL in Layyah stroke survivors. This suggests that emotional elements like despair or anxiety, as well as everyday routine function, should not be disregarded by therapists. Indeed, in addition to receiving care for their chronic illness, stroke patients may require greater functional and emotional assistance. In summary, stroke survivors had considerably poorer HR-QoL than non-stroke participants. As a result, controlling anxiety or depressive disorders, smoking, cardiovascular issues, and maintaining physical function may be top priorities for enhancing the HR-QoL of stroke survivors in Layyah. In our study, we only discovered specific support for this relationship: among patients with hypertension and stroke, gender had an effect on the community domain of QOL and revenue had an effect on the physical domain. Other socio-demographic factors, such as age and education, had no discernible effect on any aspect of QOL in patients with hypertension and stroke. Among patients with hypertension and stroke, education had no discernible effect on any of the QOL dimensions, but between patients with hypertension alone, we discovered a statistically substantial association between education and a number of QOL domains. In light of Dressler's study, which revealed that poorer instruction was linked to high blood pressure and a higher transience rate since cardiovascular illness, these findings take on greater significance. The Centers for Disease Control and Prevention (CDC) confirm this conclusion by stating that the issue of women's declining health-related eminence of life is predominantly significant (37). In adding, Manan al. discovered that among obese primary care patients, being a woman and having a short glassy of instruction were substantially linked to lower quality of life ratings (38).One of the previous study looked at the association between hypertension and HR-QoL in hypertensive patients while taking socio- demographic characteristics and comorbidities into account. In addition, they looked at how comorbid conditions including diabetes, COPD, obesity, and anxiety/depression affected the HR-QoL of persons with hypertension (39).

Permissions process from different hospitals were not easy to carry out. Due to lack of literature, there was a lot of variation. It's challenging to aggregate data since research differ in terms of outcome measures. Prior to beginning on larger-scale investigations, these features should be standardized. Health care department should improve their policies regarding the strategies and developing interventions to improve health related quality of life. Introduce some management techniques and support to the Hypertension patients. Large sample size should be consider.

Conclusion

Compared to individuals with high blood pressure, QOL is more liable to be impacted by the disability caused by the stroke itself and less by physiological depress and socio- demographic variables in individuals with hypertension and stroke. The specific features of people with mild to moderate stroke may be significant to consider when devising comprehensive, focused therapies meant to maximize recovery and enhance HRQOL, even though outcomes may not generalize to lower functioning stroke survivors.

Author Contributions:

This manuscript is the part of M.phil. thesis of Muhammad mubeen

Data curation, writing—original draft preparation by Muhammad mubeen

Conceptualization, supervision, and project administration done by Saman Zahra,

Investigation and formal analysis done by Maliha Ghaffar

All authors have read and agreed to the published version of the manuscript

Conflicts of Interest: The authors declare no conflict of interest.

REFERENCES

Johnson W, Onuma O, Owolabi M, Sachdev S. Stroke: a global response is needed. Bulletin of the World Health Organization. 2016;94(9):634.

Feigin VL, Forouzanfar MH, Krishnamurthi R, Mensah GA, Connor M, Bennett DA, et al. Global and regional burden of stroke during 1990–2010: findings from the Global Burden of Disease Study 2010. The lancet. 2014;383(9913):245-55.

Bennett DA, Krishnamurthi RV, Barker-Collo S, Forouzanfar MH, Naghavi M, Connor M, et al. The global burden of ischemic stroke: findings of the GBD 2010 study. Global heart. 2014;9(1):107-12.

Arovah NI, Heesch KC. Assessment of the validity and reliability of the Indonesian version of Short Form 12 (SF-12). Journal of preventive medicine and hygiene. 2021;62(2):E421.

Mulrow CD, Pignone M. What are the elements of good treatment for hypertension? Bmj. 2001;322(7294):1107-9.

Khalid W, Rozi S, Ali TS, Azam I, Mullen MT, Illyas S, et al. Quality of life after stroke in Pakistan. BMC neurology. 2016;16:1-12.

Farooq M, Majid A, Reeves M, Birbeck G. The epidemiology of stroke in Pakistan: past, present, and future. International journal of stroke. 2009;4(5):381-9.

Öhgren B, Weinehall L, Stegmayr B, Boman K, Hallmans G, Wall S. What else adds to hypertension in predicting stroke? An incident case–referent study. Journal of internal medicine. 2000;248(6):475-82.

Bath P, Boysen G, Donnan G, Kaste M, Lees KR, Olsen T, et al. Hypertension in acute stroke: what to do? Stroke. 2001;32(7):1697-8.

Benjamin E, Blaha M, Chiuve S, Cushman M, Das S, Deo R. Comité de Estadísticas y del Subcomité de Estadísticas de Ataque Cerebral de la American Heart Association. Estadísticas de enfermedad cardíaca y de ataque cerebral. Información actualizada para 2017: Informe de American Heart Association. Circulation. 2017;135:e146-603.

Zia-Ullah SI, Zaheer M, Iqbal A, Alam M, Pechuho S-u. Frequency of Severely Elevated Blood Pressure on Admission in Known Hypertensive Patients Presenting with Acute Haemorrhagic Stroke. Pakistan Heart Journal. 2022;55(1):53-6.

Grimm RH, Grandits GA, Cutler JA, Stewart AL, McDonald RH, Svendsen K, et al. Relationships of quality-of-life measures to long-term lifestyle and drug treatment in the Treatment of Mild Hypertension Study. Archives of internal Medicine. 1997;157(6):638-48.

Qiu C, Shao D, Yao Y, Zhao Y, Zang X. Self-management and psychological resilience moderate the relationships between symptoms and health-related quality of life among patients with hypertension in China. Quality of Life Research. 2019;28:2585-95.

Turana Y, Tengkawan J, Chia YC, Nathaniel M, Wang JG, Sukonthasarn A, et al. Hypertension and stroke in Asia: a comprehensive review from HOPE Asia. The Journal of Clinical Hypertension. 2021;23(3):513-21.

Herpich F, Rincon F. Management of acute ischemic stroke. Critical care medicine. 2020;48(11):1654-63.

Vahedi S. World Health Organization Quality-of-Life Scale (WHOQOL-BREF): analyses of their item response theory properties based on the graded responses model. Iranian journal of psychiatry. 2010;5(4):140.

Müller-Nordhorn J, Nolte CH, Rossnagel K, Jungehülsing GJ, Reich A, Roll S, et al. Knowledge about risk factors for stroke: a population-based survey with 28 090 participants. Stroke. 2006;37(4):946-50.

Kombo HZ, Mehdi S, Krishna K, Roohi TF. Stroke and its association with sickle cell disease-A review. Research Journal of Pharmacy and Technology. 2023;16(6):3004-8.

Scale NS. National Institute of Neurological Disorders and Stroke. 2020.

Chorney MLA. Impact of American Heart Association Hypertension Guideline Toolkit on Blood Pressure: Grand Canyon University; 2023.

Avis N, Smith K. Conceptual and methodological issues in selecting and developing quality of life measures. Advances in medical sociology. 1994;5:255-80.

Vellerand A, Breckenridge N, Hodgson N. Theories and conceptual models to guide quality of life related research. Eds.: King CR & Hinds PS: Quality of life: From nursing and patient perspectives. Theory-Research–Practice Sudbury Massachusetts, Jones and Bartlett Publishers. 1998:37-53.

Group W. Development of the World Health Organization WHOQOL-BREF quality of life assessment. Psychological medicine. 1998;28(3):551-8.

Duncan L, Bateman DN. Sexual function in women: do antihypertensive drugs have an impact? Drug safety. 1993;8(3):225-34.

Weiss RJ. Effects of antihypertensive agents on sexual function. American family physician. 1991;44(6):2075-82.

Ferreira JP, Böhm M, Rossignol P, Zannad F. Impact of anti-hypertensive therapy in the sexual health of men and women: an analysis from the SPRINT trial. American Journal of Hypertension. 2021;34(7):760-72.

Fryer CE, Luker JA, McDonnell MN, Hillier SL. Self management programmes for quality of life in people with stroke. Cochrane Database of Systematic Reviews. 2016 (8).

Turja T, Rosenlund M, Jylhä V, Kuusisto H. Shared decision-making endorses intention to follow through treatment or vaccination recommendations: a multi-method survey study among older adults. BMC Medical Informatics and Decision Making. 2024;24(1):202.

Goes M, Lopes M, Marôco J, Oliveira H, Fonseca C. Psychometric properties of the WHOQOL-BREF (PT) in a sample of elderly citizens. Health and Quality of Life Outcomes. 2021;19(1):146.

Oh GC, Cho H-J. Blood pressure and heart failure. Clinical hypertension. 2020;26:1-8.

Erickson SR, Williams BC, Gruppen LD. Relationship between symptoms and health-related quality of life in patients treated for hypertension. Pharmacotherapy: The Journal of Human Pharmacology and Drug Therapy. 2004;24(3):344-50.

Carod-Artal FJ, Egido JA. Quality of life after stroke: the importance of a good recovery. Cerebrovascular diseases. 2009;27(Suppl. 1):204-14.

Jaracz K, Opala T. Quality of life of women after ischemic stroke. Ginekologia Polska. 2003;74(1):17-23.

Damsbo AG, Kraglund KL, Buttenschøn HN, Johnsen SP, Andersen G, Mortensen JK. Predictors for wellbeing and characteristics of mental health after stroke. Journal of affective disorders. 2020;264:358-64.

Winnicki M, Somers VK, Dorigatti F, Longo D, Santonastaso M, Mos L, et al. Lifestyle, family history and progression of hypertension. Journal of hypertension. 2006;24(8):1479-87.

Stein JD, Brown GC, Brown MM, Sharma S, Hollands H, Stein HD. The quality of life of patients with hypertension. The journal of clinical hypertension. 2002;4(3):181-8.

Trevisol DJ, Moreira LB, Kerkhoff A, Fuchs SC, Fuchs FD. Health-related quality of life and hypertension: a systematic review and meta-analysis of observational studies. Journal of hypertension. 2011;29(2):179-88.

Mannan A, Akter KM, Akter F, Chy NUHA, Alam N, Pinky SD, et al. Association between comorbidity and health-related quality of life in a hypertensive population: a hospital-based study in Bangladesh. BMC Public Health. 2022;22(1):181.

Lewis Jr R, Ford-Robertson J, Dennard D. Inner city quality of life: a case study of community consciousness and safety perceptions among neighborhood residents. Open Access Library Journal. 2016;3(11):1-11.