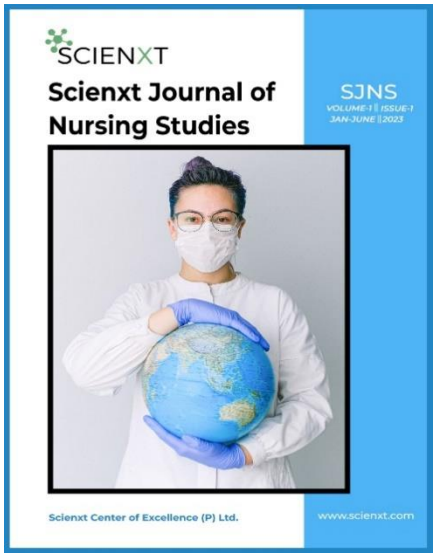

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Assessment of risk factors of stroke among clients attending medicine OPD, BSMC&H, Bankura, West Bengal

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Abstract:

A descriptive study was adopted on assessment of risk factors of stroke among clients attending medicine OPD, BSMC&H, Bankura, and West Bengal with the objectives to assess the risk factors of stroke among clients attending medicine OPD, BSMC&H and to find out the association between the risk factors of stroke with the selected demographic variables. By non-probability convenience sampling 180 clients were selected using semi-structured interview schedule, structured interview schedule, bio physiological measurement and a perceived stress scale. The findings revealed that that 41.11% of clients with 40-50 years of age and 55% of clients male, 41.78% of clients had history of hypertension and 32.11% of clients taking antihypertensive medicine, 40.50% of clients had family history of hypertension, 72.22% of clients had moderate risk of stroke, 51.11% of clients had normal BMI and 42.22% clients with normal blood pressure without medicine and 72.78% clients with normal blood sugar level without medicine with 93.89% of clients had moderate stress. Statistically significant associations were found between risk factors of stroke with socio economic class, hypertension with age, history of taking medicine, family history, between blood glucose with age, socioeconomical class, history of taking medicine, family history, level of stress with occupation, treatment of medical illness at 0.05 level of significance. The scope of generalization of findings were limited to present study population and study has implicated on nursing practice, education and research.

Keywords:

Risk factors, Stroke, Clients attending Medicine OPD.

1. Introduction:

Stroke is a major health problem worldwide. The burden of stroke in India gradually rising over the past few decades.[1]Stroke or cerebrovascular accident is an emergency medical condition in which poor flow to the brain causes cell death.[2]According to World Health Organization stroke is a rapidly developed clinical signs of focal disturbance of cerebral function, with symptoms lasting more than 24 hours or longer or leading to death, with no apparent cause other than vascular origin.[3]Stroke is a neurologic changes caused by an interruption in the blood supply to a part of brain. Ischemic and hemorrhagic are the two major types of strokes. Ischemic stroke is caused by a thrombotic or embolic blockage of blood in the brain. Bleeding into the brain tissue or subarachnoid space causes a hemorrhagic stroke.[4] Stroke is the highest risk of death. According to World Health Organization (2022) 15 million people worldwide suffer a stroke annually. Out of these 5 million die and another 5 million are left permanently disabled, causing a burden on family and community. [5] In a report of The Tribune (2021) stated that stroke affects 18 lakh Indians every year, which means one Indian suffers stroke every 40 seconds.60% stro ke cases in India leading to disability, 30% causes death.[6]Stroke is a

Serious neurological problem with significant morbidity and mortality. In India, the risk factors for stroke are increasing with the increase of economic development and causes the burden of stroke.[7]Stroke leads to root cause of mortality and morbidity. The incidence of stroke is increasing in developing countries rather than developed countries.[8]

2. Need of the Study:

Stroke is the second leading cause of death and combindly the third leading cause of death and disability in the world. From 1990-2019 the burden of stroke increased gradually. The incidence of stroke increased 70.0%, 102.0% prevalent stroke, deaths from 43.0% to 86.0% due to stroke in the lower income lower middle income countries in the world.[22] Incidence of stroke (2017) in Asia varied between 116 and 483/100000 per year.[8]

One out of three people in the age group of 30-69 years living in northeastern states of India were suffered from premature deaths due to haemorrhagic stroke in 2015. People from Assam, West Bengal, Chattisgarh and northeastern state suffered from death for both male and female.[23]

ICMR study (2021) showed that Brain stroke rate highest in Cuttack in India. The study revealed that 187 people in every one lakh population and 96 stroke cases per 1 lakh population suffered from brain stroke in Cuttack. The risk factors which associated with stroke was hypertensionin Cuttack and Kota, diabetes in Varanasi, tobacco use in Cuttack and Thirunalveli.[24]

Mohanty M, Sahu S, Jena SK (2020) conducted a study on" A study on socio-clinical profile and associated risk factors of stroke patients admitted to neurology department of SCB Medical College, Cuttack, Odisha.". The study aimed to find the prevalence of types of strokes among the patients admitted in neurology department of SCB Medical College, to assess demographic profiles of patients and to find out the associated risk factors of strokes. The study was conducted in neurology I.P.D. of SCBMCH, Cuttack with 180 subjects. The data was collected by Semi-structured schedule. Out of 180 patients 60% and 40% female. 41.2% completed up to primary school, 37% up to middle school, and 21.8% completed high school or above. According to modified B. G. Prasad scale-2018 (53.4%) belonged to upper middle class, upper class (35.5%), middle class (7.2%), lower middle class (2.2%) and only 1.7% belonged to lower class. The study results also showed that 138 (76.7%) had ischemic stroke and 42 (23.3%) had haemorrhage. 32.2% were found to be in age group of 60-69 years, 29.4% in ≥70 years of age, 19.4% in 50-59-year age group, 15.6% in 40-49-year age group.

The risk factors was hypertension (63.3%), Diabetes mellitus 37%, alcohol intake 53.9%.[25]

In a systematic analysis for the Global burden of disease study (1990-2019) on "Global, regional and national burden of stroke and its risk factors" showed that in 2019 12.2 million incident of stroke, 101 million prevalent of stroke case and 6.55 million death from stroke. Among all the stroke cases incident of ischemic stroke 62.4% , 27.9% intracerebral hemorrhagic and 9.7% subarachnoid hemorrhagic stroke. The study also showed five leading risk factors of stroke. They were high systolic blood pressure in 79.6 million people, high body mass index in 34.9 million people, fasting plasma glucose in 28.9 million people, ambient particulate matter pollution in 28.9 million and smoking 25.3million people.[26]

Ojha P, Basak S, Aglave V (2013- 2019) conducted a study on "Incidence of stroke in adults according to age, sex and subtypes in urban population" in Mumbai. with the objective to identify incidence of stroke stratified by age, sex, and stroke subtype. Among 1377 patients, 1246 were ischemic and 131 haemorrhagic. The result showed that average age was 49.06 years and 53% were males. 50% strokes occurred with 46-65 years age , and 25% in over 65 years of age. 21% hemorragic and 16% ischemic occurred under 45years of age. The study result

showed that young females had lesser risk stroke than males but females above 65years had a significantly greater risk of ischemic stroke (P value <0.005). The risk of intracerebral bleed in males under 45 years was significantly more than that of females (p value <0.001).[27]

Kannan V, Justin C, Prashanth PRS, Alexander N (2018) conducted a study on "Clinical prevalence of stroke in tertiary are hospital in Southern India" in Government Rajaji Hospital and Madurai Medical College. The aim of the study was to review the prevalence of stroke in a tertiary care hospital in southern India. The study result shows that among 1168 stroke patients 779 males and 389 females. There were 848 ischaemic stroke patients (72.60%), 320 haemorrhagic stroke patients (27.39%). Anterior circulation stroke prevalence was higher (88.27%) when compared to posterior circulation stroke. 498 patients (42.63%) belonged to the age group of 40 to 60 years.[28]

Sankar Debasis, Halder Subrata, Saha Bikram kr (2016) conducted a study on "A study of stroke patients with respect to their clinical and demographic profile and outcome" on Malda medical college, IPGME&R, Nadia district hospital. 501 patients of stroke were included this study. Detailed history, physical examination and relevant systemic examination including detailed examination of neurological system were performed and necessary lab investigations were done. The result showed that among 501 stroke patients 90 (18%) patients were of young and 236 (47.1%) of elderly (>60years). Among them 435 (86.8%) were hypertensive and 130 (25.9%) had H/O diabetes and 160(75.83%) had dyslipidemia.[29]

Kalkonde YV, Sahane V, Deshmukh MD, Nila S, Mandava P, Bange A (2016) conducted a study on " High prevalence of stroke in Rural Gadchirolu, India". The study was conducted by house to house survey in 45,053 living population in 39 villages. Among them 175 patients had stroke, the mean age was 60.9+ 14.7 years the crude prevalence rate of stroke was 388.43/100,000 population and was significantly higher among men than among women.[30] Stroke is the main cause of death. There were many people who are unknown about the risk factors of stroke. If the risk factors of stroke are identified there will be a hope to reduce the morbidity and mortality due to stroke. This type of study was less conducted in West Bengal. So the investigator feels the need to assess the risk factors of stroke among clients attending medicine OPD, BSMC&H, Bankura, West Bengal.

3. Statement of the problem:

Assessment of risk factors of stroke among clients attending medicine OPD, BSMC&H, Bankura, West Bengal.

3.1. Purpose of the study:

The purpose of the study was to identify the risk factors of stroke among clients attending the medicine OPD.

3.2. Objectives of the study:

1. To assess the risk factors of stroke among clients attending medicine OPD, BSMC&H.
2. To find out the association between the risk factors of stroke with the selected demographic variables.

3.3. Delimitations of the study:

The study was delimited to only single setting, medicine OPD, BSMC&H, Bankura.

4. Methodology:

4.1. Research approach:

Quantitative approach

4.2. Research design:

Descriptive survey research design.

4.3. Variables:

Research variables- Risk factors of stroke.

Risk factors are blood pressure, cardiac disease, diabetes mellitus, hyperlipidemia, obesity, habit of taking extra salt, habit of smoking, habit of alcohol consumption, consumption of fatty foods, consumption of oily food, regular exercise, sleep disturbance, stress.

4.4. Demographic variable:

Age, sex, marital status, educational status , occupation, socioeconomical class , history of medical illness, duration of medical illness, treatment of medical illness, history of taking any medicine, family history, any blood investigation done.

4.5. Settings:

For Pilot study – Medicine OPD ,Midnapore Medical College & Hospital, Paschim Medinipur, West Bengal.

For Final study- Medicine OPD, BSMC&H, Bankura, West Bengal.

4.6. Population:

Clients attending medicine OPD in West Bengal.

4.7. Sample:

Clients attending medicine OPD, BSMC&H, Bankura, West Bengal.

4.7.1. Sample size:

180

4.7.2. Sample criteria:

4.8. Inclusion criteria:

1. Both male and female clients attending medicine OPD, BSMC&H, Bankura
2. 40 years and above age.
3. Clients willing to participate in the study.

4.9. Exclusion criteria:

1. Diagnosed CVA.
2. Clients with acute physical illness.
3. Clients attending first time at medicine OPD.

4.10. Sampling techniques:

Data was collected by Non probability convenience sampling technique.

Table. 1: Data collection the tools & techniques.

Tool no	Variables to be measured	Tool	Techniques
I.	Demographic variables	Semi structured interview schedule.	Interviewing.

II.	Risk factors of stroke.	IIA.Structured interview schedule. IIB.Biophysiological measurement. IIC. Perceived stress scale	Interviewing Physical Assessment. Interviewing.

4.11. Pretesting of the tool:

Pretesting of the tool was done to check the clarity of the item, feasibility and practibility of item.

The tool is administered on ten (10) patients attending medicine OPD of BSMC&H, Bankura.

4.12. Reliability of tool:

Reliability of the tool was done on 20 clients attending the medicine OPD, BSMC&H, Bankura ***Table. 2: Reliability of the tools***

Tool no	**Method**	**Reliability**
Tool II A	Cronbach Alpha	0.79
Tool II B	Inter rater reliability.	1
Tool IIC	Cronbach Alpha	0.92

5. Data analysis & Discussion:

Table. 3: Distribution of study subjects according to age, sex, marital status, Occupation, Educational status, socioeconomic class of clients attending medicine OPD. n=180

Variables	Frequency	Percentage(%)
Age(in years)		
40-50	74	41.11 35.00
51-60	63	16.11
61-70	29	7.78
71-80	14	
Sex		
Male	99	55.00

Female	81	45.00
Married status		
Unmarried	Nil	0.00
Married	165	91.67
Widow	9	5.00 3.33 0.00
Widower.	6	0.00
Divorced	Nil	
Separated	Nil	
Occupation		
Daily labour.	58	
Service.	3	32.22 01.67 14.45
Business.	26	49.44
Home maker	89	2.22
Unemploed	4	
Educational status:		
Illiterate	30	16.67
No formal education but able to sign.	34	18.89 33.89
Primary	61	24.44
Secondary	44	01.11
Higher secondary	2	5.00
Graduate & above	9	
Socioeconomical class:		
I (Upper class)	Nil	
II (Upper middle class)	Nil	0.00
III (Middle class)	18	0.00
IV(Lower middle class)	78	10.00 43.33
V (Lower class)	84	46.67

Data presented in table 3 depicted that maximum (41.11%) of clients belongs to 40-50 years of age and only 7.78% belongs to 71-80 years of age., (55%) of clients were male and 45% were female , most of clients (91.67%) were married and only 3.33% were widow, maximum (49.44%) were home maker and only 1.67% were engaged to service, (33.89%) were completed upto primary level of education and only 1.11% were completed upto higher secondary level of education., maximum (46.67%) clients were belongs to lower socioeconomic class and 10% were belonged to middle socioeconomic class.

Table 4 Distribution of study subjects according to history of medical illness, duration of medical illness, treatment of medical illness , history of taking any medicine, family history of clients attending medicine OPD

Variables	***n***	***Frequency***	***Percentage(%)***
History of medical illness:	146		
Diabetes Hypertension		41	28.08
Kidney disease.		61	41.78
Heart disease		30	20.55
TIA		13	8.90
Duration of medical illness:		01	0.69
<1year	180		
1-5 year		52	28.89
6-10 year		103	57.22
11-15 year		17	9.44
Treatment of medical illness:		08	4.45
Regular	180		
Irregular		125	69.44
		55	30.56

History of taking any medicine:	190		
Hormone therapy		41	21.58
Corticosteroids		8	4.21
Oral contraceptives		10	5.26
Long term use of NSAID.		Nil	0.00
Antidiabetics		34	17.89
Antihypertensive		61	32.11
Antilipidemic Antithrombotic		36	18.95
Family history :		Nil	0.00
Stroke	79		
Diabetes		13	16.46.
Hypertension		20	25.32
Heart disease		32	40.50
		14	17.72

All data are exhaustive, but not mutually exclusive , (Respondent had multiple response)

Data presented in table 4 showed that maximum (41.78%) of clients had history of hypertension and only 0.69% had TIA., majority (57.22%) of client's duration of illness were 1-5 years, only 4.45% were11-15 years., majority (69.44%) clients belongs to regular treatment, 30.56% were belongs to irregular, maximum (32.11%) of clients taking antihypertensive medicine and 4.21% taking corticosteroid., maximum (40.50%) of clients had family history of hypertension, 16.46% had stroke., majority (58.33%) of clients had blood investigation report and 41.67% had no report.

Table. 5: Mean, median and standard deviation of risk factors of stroke n=180

Variables	*Mean*	*Median*	*Standard deviation*
Total score of risk factors assessment score	12.93	13	3.21

Maximum score: 30

Minimum score: 0

Data presented in table 5 showed that calculated mean was 12.93, median 13 and standard deviation 3.21 of the total risk factors assessment score.

Table. 6: Distribution of study subjects according to the risk of stroke n=180

Risk of stroke	*Range of score*	*Frequency*	*Percentages (%)*
Low risk	<9.72 (< Mean - 1SD)	27	15.00
Moderate risk	9.72 to 16.14 (Mean + 1SD)	130	72.22
High risk	>16.14 (>Mean +1SD)	23	12.78

Maximum score: 30

Minimum score: 0

Data presented in table 6 depicted that majority (72.22%) of clients belongs to moderate risk and 12.78% belongs to high risk of stroke.

Table. 7: Distribution of study subjects according to BMI, pulse rate of clients. n=180

Biophysiological measurements	*Frequency*	*Percentages (%)*
BMI		
Grade III severe chronic energy deficiency Grade II moderate chronic energy deficiency.	Nil	0.00 0.00
Grade I mild chronic energy deficiency.	Nil	8.89
Normal	16	51.11
Preobese	92	33.33
Obese grade I	60	6.67 0.00
Obese grade II	12	0.00
Obese grade III	Nil	
	Nil	
Blood pressure		
Normal with medicine	34	18.89 42.22
Normal without medicine	76	14.44
Prehypertension with medicine	26	12.22
Prehypertension without medicine	22	5.56
		6.67 0.00

Hypertension stage 1 with medicine	10	0.00
Hypertension stage 1 without medicine	12	
Hypertension stage 2 with medicine	Nil	
Hypertension stage 2 without medicine	Nil	
Blood glucose level (random)		
Normal with medicine		
Normal without medicine	34	18.89
Diabetes mellitus with medicine	131	72.78
Diabetes mellitus without medicine	7	3.89
	8	4.44

Data presented in table 7 depicted that majority (51.11%) of clients had normal BMI, 6.67% belongs to obese grade 1, maximum (42.22%) clients with normal blood pressure without medicine, 5.56% with hypertension stage 1 with medicine., majority (72.78%) clients with normal blood sugar level without medicine and 3.89% clients with diabetes mellitus with medicine.

Table. 8: Mean, median and standard deviation of level of stress n=180

Variables	Mean	Median	Standard deviation
Total score of level of stress	20.96	21	3.07

Maximum score: 40

Minimum score: 0

Data presented in table 8 showed that calculated mean was 20.96, median 21 and standard deviation 3.07 of the total risk factors assessment score.

Table. 9: Distribution of study subjects according to the level of stress n=180

Level of stress	Range of score	Frequency	Percentages (%)
High	27-40	11	6.11
Moderate	14-26	169	93.89

Low	0-13	Nil	0.00

Maximum score: 40

Minimum score: 0

Data in above table showed that most (93.89%)of clients had moderate stress , 6.11% had high stress.

6. Discussion:

6.1. Discussion related to demographic characteristics:

The present study was supported by an epidemiological study conducted by Dr. Manna Nirmalaya ,Dr. Mondal Tanushree, Dr. Abhinesh V, Dr. Mondal Soumitra, Dr. Banerjee Shibashish, Dr. Das Debasis (2021) on selected risk factors of stroke among adults living in a slum of Kolkata among 200 subjects. The analysis showed that 64% were male, 88% were married, 50% were diagnosed hypertensive, 57.69% had duration of hypertension more than 1 year.[31] The present study was fully supported by the study conducted by Dr. Mubashshir Mohammed, Dr. Hoda Arif, Dr. Chandrakar Santwana (2020) on modifiable risk factors of stroke in Navi Mumbai among 92 participants. The analysis showed that 55% were male.[32]

The present study also partially supported by another study conducted by Mondal Md Badrul

Alam, Hasan A T M Hasibul, Khan Nusrat, Mohammad Quazi Deen (2018) on prevalence and risk ractors of Stroke in Bangladesh . the study analysis showed that 86.4% were married, 79.2% had history of hypertension.[33] The present study was partially supported by another study conducted by Pravakar S, Suravarapu S, Mathai D, Renangi S, Challa S (2017) on risk factors of stroke in rural Telengana state. The study showed that 76.2% were less than 55 years age.[35] The present study also partially supported by a study on prevalence of stroke and its risk factors among the geriatric population in the rural field practice area of Mandya Institute of Medical Sciences, Mandya conducted by MG Sujatha (2017). The study showed that 38.40 %were homemaker, 36.30% were hypertensive.[36]

6.2. Discussion related to risk factors of stroke

The study was partially supported by another study conducted by Li, MM Rui-Cen , MD WangDong (2018) on risk of stroke and associated risk factors in health examination population. The study was showed that 37.58% had moderate risk of stroke.[34]

The present study was also supported by another study conducted by Dr. Mubashshir Mohammed, Dr. Hoda Arif, Dr. Chandrakar Santwana (2020) on modifiable risk factors of stroke among 92 participants. The analysis showed that 68% had normal BMI.[32]

The present study was partially supported by another study conducted by Pravakar S, Suravarapu S, Mathai D, Renangi S, Challa S (2017) on risk factors of stroke in rural Telengana state. The study result showed that 49.5% had normal BMI, 61.6% patient are normotensive, 51.2% were nondiabetic.[35]

The present study also partially supported by a study on prevalence of stroke and its risk factors among the geriatric population in the rural field practice area of Mandya Institute of Medical Sciences, Mandya conducted by MG Sujatha (2017). The study results showed that 57.60% had normal BMI.[36]

The present study was supported by a an epidemiological study conducted by Dr. Manna Nirmalaya ,Dr. Mondal Tanushree, Dr. Abhinesh V, Dr. Mondal Soumitra, Dr. Banerjee Shibashish, Dr. Das Debasis (2021) on selected risk factors of stroke among adults living in a slum of Kolkata among 200 subjects. The study showed that 72.03% have normal blood glucose level..[31] The present study was partially supported by another study by Jacob George P, Kulkarni Muralidhar M (2013) on risk factors of stroke in coastal villages iof Uttara Kanada district. 61.3% had moderate level of stress among 45 subjects.[38]

6.3. Discussion related to association between the risk factors of stroke and demographic variables

The present study was supported by a an epidemiological study conducted by Dr. Manna Nirmalaya, Dr. Mondal Tanushree, Dr. Abhinesh V, Dr. Mondal Soumitra, Dr. Banerjee Shibashish, Dr. Das Debasis (2021) on selected risk factors of stroke among adults living in a slum of Kolkata among 200 subjects. The study showed that increasing age was significantly associated with hypertension.[31]

The present study also supported by Nakibuuka J, Sajatovic M, Nankabirwa J, et al (2013) on Stroke risk factors differ between rural and urban communities in wakiso district in Uganda. The study results showed that age, history of medical illness, family history were associated with hypertension.[37]

7. Conclusion:

From the study findings it can be concluded that assessment of risk factors of stroke is an important way to reduce the burden of stroke. Hypertension, increased age are the major risk factors of stroke. The association was found between the age, history of medical illness, family history and hypertension. By assessment the risk factors the researcher can control the occurrence of stroke.

Further study also partially and fully supported with the present study.

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Conflict of Interest Not Available

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