



ORIGINAL ARTICLE

# Distribution of different *deha prakriti* among stroke patients- A cross-sectional survey

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## Abstract

Stroke forms the second most common cause of death and third most common cause of death and disability combined (measured by disability-adjusted life years lost - DALYs) globally. Advancements in the medical field over recent years have significantly lowered the mortality rates among patients who have suffered strokes. However, the survivors had a high prevalence of disability that is 101 million people are dealing with the consequences of a stroke globally, resulting in 44 million disability-adjusted life years lost annually. *Prakriti*, a unique concept explained by Ayurveda as the inherent composition of an individual, determines the susceptibility, manifestation, course of disease and an individual's response to treatment. Therefore, *Prakriti* makes every individual unique in, therapeutic as well as preventive aspects. The present survey aims to determine the prevalence of different *deha prakriti* among stroke patients.

A cross-sectional survey was conducted among 96 stroke patients aged between 40 - 70 years, irrespective of gender, who were admitted to Government Ayurveda Hospitals of Kannur district. Their *prakriti* was assessed by a standardised *prakriti* assessment scale from AYURPRAKRITI WEB PORTAL developed by CCRAS New Delhi India.

Out of 96 participants, 51.3% had *kapha* predominant *prakriti*, followed by 27.1% with *vata* predominant *prakriti* and 19.8% with *pitha* predominant *prakriti*. Therefore, *Kapha* predominant *prakriti* was prevalent among stroke patients of Government Ayurveda Hospitals in Kannur district.

## Introduction

The World Health Organization defines stroke as, rapidly developing clinical signs of focal or global disturbances of cerebral function, with symptoms lasting 24 hours or longer or leading to death with no apparent cause other than vascular origin<sup>1</sup>. Stroke forms the second most common cause of death and third most common cause of death and disability combined (measured by disability-adjusted life years lost -DALYs) globally. Among them, 89% of stroke deaths and disability combined belong to lower to middle-income countries<sup>2</sup>. In India, Stroke is presently the fifth leading cause of disability and the fourth leading cause of death<sup>3</sup>. During the past years, the

advancements in the medical field have significantly reduced the death rates among stroke patients. However the survivors had a high prevalence of disability, that is 101 million people are dealing with the consequences of a stroke globally, resulting in 44 million disability-adjusted life years lost annually<sup>2</sup>.

The signs and symptoms of stroke can be compared with *pakshaghata*, a *vatajananatmaja vyadhi*<sup>4</sup>. In India Approximately 59.3% of stroke patients will consult an Ayurvedic physician at some point during their treatment. Samhitas have explained that an aggravated *vata dosha* either due to *margavarana* or *dhathukshaya* localised in *sira* and *snayu* results in *pakshaghata*. It is characterised by, *akarmanya* (loss of activity) and *vichetana* (loss of sensation) of half of the body, *sandhi bandha mokshana* etc<sup>6</sup>.

*Prakriti* is a unique concept explained by Ayurveda as the inherent composition of an individual, which become distinct since fertilization and is determined by the *dosha* predominance of *sukra* and *artava*. *Prakriti* explains the physical, physiological, psychological and behavioural constitution of an individual. The concept of *Prakriti* emphasizes the importance of an individualised approach in the preventive and therapeutic aspects of various diseases. *Prakriti* influences an individual's response to environmental factors, medications, and disease susceptibility, making it one of the earliest principles of preventive and personalized medicine<sup>7</sup>. *Prakriti* also plays a role in determining the prognosis of diseases, along with factors such as *dooshya*, *desh*, *rtu* etc. Therefore, the determination of *prakriti* among stroke patients helps in preventive, promotive, predictive and personalised medicine.

### Aim and objectives

To find out the prevalence of different *dehaprakriti* among stroke patients.

### Materials and methods

**Study population and setting:** Diagnosed cases of stroke, who were admitted to Government Ayurveda Hospitals of Kannur District from June 2023 to January 2024.

**Sampling method:** Quota sampling

**Sample size:** 96

$$N = Z\alpha^2 \times PQ \div d^2$$

Assuming 50% prevalence for a particular *Prakriti* among stroke patients and a precision of 10%,

$$P = 50$$

$$Q = 100 - 50 = 50$$

$$D = 10$$

$$N = 3.84 \times 50 \times 50 \div 100 = 96$$

**Inclusion criteria:** Diagnosed cases of stroke, of the age group 40-70 years, irrespective of gender, who were admitted to Government Ayurveda Hospitals of Kannur District.

**Exclusion criteria:** Diagnosed cases of stroke, those who refuse or are unable to provide informed consent.

**Assessment of Prakriti:** The *prakriti* of the participants were assessed by a standardised *Prakriti* assessment scale (CCRAS-PAS Version 2) developed by CCRAS New Delhi India.

**Statistical analysis:** The data were summarised using descriptive statistics and charts.

### Ethical consideration

Prior to the study, a clearance from the Institutional Ethics Committee (Ref No: E2/3907/2021/ACK/PG-07) was obtained. Then, informed written consent was obtained from the participants in their local language after informing about the basic details of the study.

## Results

### Distribution of age

Among 96 participants majority of the participants (47.9%) belong to 61-70 years age group.

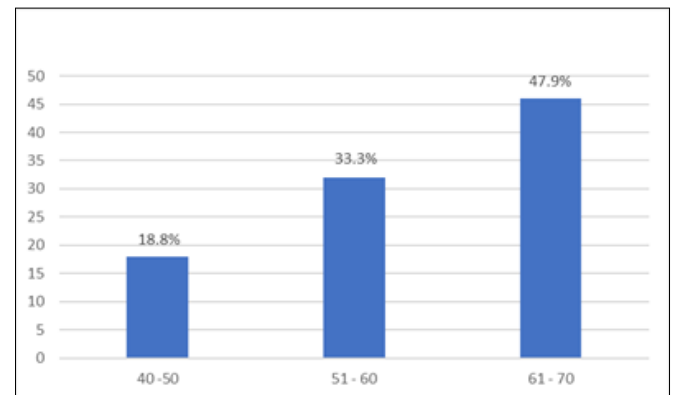


Figure 1. Distribution of age

### Distribution of gender

Most of the participants were males (84.4%).

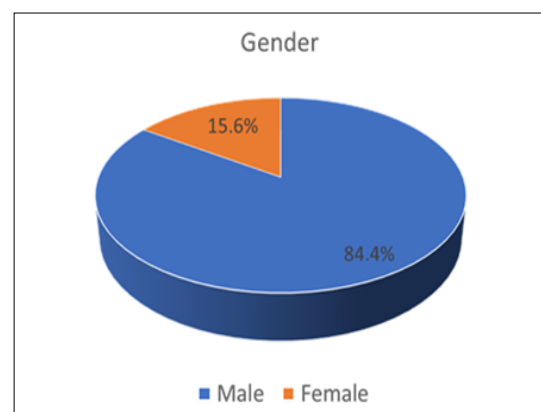


Figure 2. Distribution of gender

### Distribution of types of stroke

82.3% of participants had ischemic stroke and 17.7% had haemorrhagic stroke.

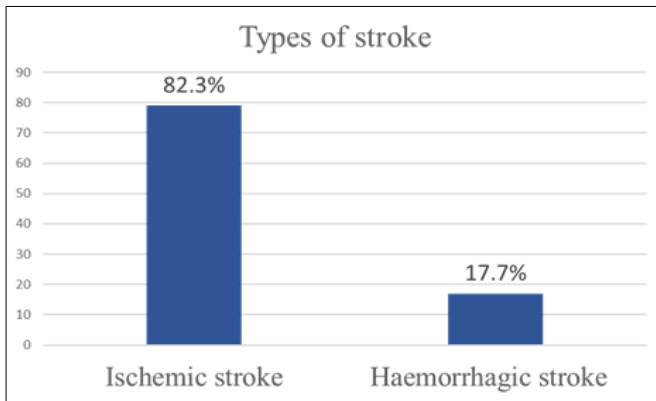


Figure 3. Distribution of types of stroke

### Distribution of presenting complaints

All of the participants presented with varying degrees of weakness, followed by slurring of speech (42.7%) and numbness (31.33%).

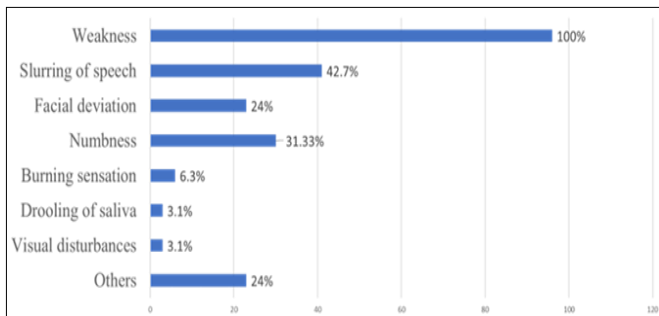


Figure 4. Distribution of presenting complaints

### Distribution of co-morbidities

Among 96 participants 83.3% had hypertension, 52.1% had diabetes Mellitus and 33.3% had dyslipidaemia.

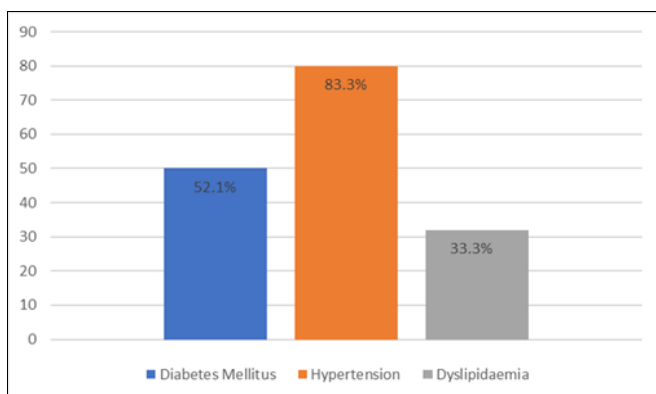


Figure 5. Distribution of co-morbidities

### Distribution of family history and recurrence of stroke

36.5% of participants had a family history of stroke and 16.7% had recurrent stroke.

### Distribution of sleep

More than (51%) of the participants had disturbed sleep.

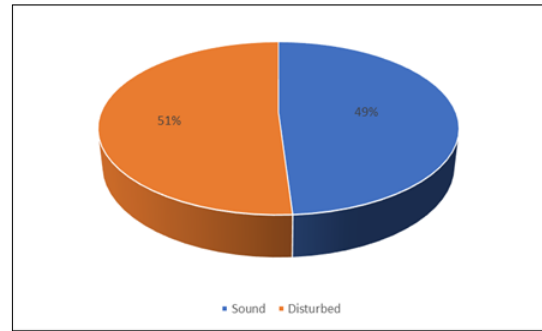


Figure 6. Distribution of sleep

### Prevalence of Prakriti among stroke patients

Among the participants, 53.1% of the participants had *kapha*-predominant *prakriti*, 27.1% had *vata*-predominant *prakriti* and 19.8% had *pitha*-predominant *prakriti*.

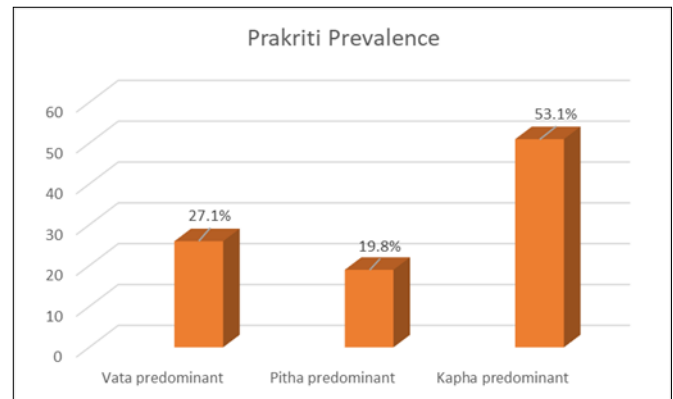


Figure 7. Prevalence of prakriti

### Discussion

Majority of the participants belonged to 61-70 years age group. Age-related alterations in vascular structure, risk factor prevalence and physical inactivity among the elderly often result in increased incidence of stroke among the elderly.

The gender-wise distribution of participants showed a male predominance. The increased prevalence of risk factors among males and the protective effect of hormones especially endogenous oestrogens among females contribute to this discrepancy.

*Prakriti* is the basic constitution of an individual and is determined by *dosha* prevalence at the time of conception of that particular individual. This *dosha* prevalence of the *Prakriti* does not cause any disease and is compared with *visheneva vishakrime* - Just as the venom of a poisonous creature poses no threat to itself. However, *Prakriti* can act as a potential contributing factor for disease onset by predisposing the individual to diseases. The interaction of the dominant *dosha* element of *prakriti* with factors such as *desha* (geographic location), *kala*(time) etc leads to this occurrence. Therefore, a particular *prakriti* can be prevalent among a specific disease population. In the current study, the prevalence of different *deha Prakriti* among stroke patients was assessed and a prevalence of *Kapha*-predominant *Prakriti* was noted.

Ayurveda compares signs and symptoms of stroke with *pakshaghata* which is explained under *vataja nanatmaja vyadhi*. Samhitas have mentioned *Vata prokopa* as the *nidana* of *pakshaghata* and it occurs either due to *dhathu kshaya* or *margavarana*. In the current scenario, due to contemporary dietary habits and lifestyle choices, there has been a noticeable rise in the risk factors associated with ischemic stroke and its occurrence, which can be compared with *margavarana*. A *kapha* dominance in *Prakriti* was identified by the present study. When individuals with a dominance of *kapha dosha* are exposed to various risk factors are more prone to the development of *avarana* owing to their *guna* like *sthaimitya*, *Snigdha*, *mrtsna*, *sthira* and *gurutwa*.

The concept of *prakriti* explains the uniqueness of every individual in terms of physical, physiological, psychological and behavioural characteristics. This inter-individual variability emphasises the need for a personalised approach in predictive, preventive and curative aspects of medicine. Therefore, constitution or *prakriti*-based preventive approaches including diets, regimens and treatment protocol can provide a promising result rather than a general treatment or preventive strategies. This concept bridges Ayurveda with modern branches of science like Ayurgenomics, epigenetics, etc. Ayurgenomics compares *prakriti* with genomics which in future can be used to identify risk factors for various diseases, predict their course, and provide personalised treatment approaches. Epigenetics explains how changes in phenotype can occur without modifications to the genotype, influenced by factors such as lifestyle, behavior, diet, digestion, stress, and environmental conditions. It has been proposed that genotype and phenotype can be compared to *janma prakriti* and *dehaprakriti*, and this idea may be applied to develop personalized prevention strategies<sup>8</sup>.

### Limitations

- The study setting is confined to a single geographic area therefore the results cannot be generalized.
- The number of females were very less when compared with males.

### Conclusion

The knowledge of *prakriti* or one's constitution provides information on physical, physiological, psychological and behavioural attributes along with susceptibility, course of the disease, symptom presentation, and mode of treatment among that particular individual. It provides a personalised preventive and curative strategy for a particular individual. *Prakriti* also determines the prognosis of a disease along with other factors like *dushya*, *desha*, *kala* etc. In the present study an attempt has been made to identify the *prakriti* prevalence among stroke patients and *kapha* predominant *prakriti* was prevalent among stroke patients.

### Conflict of interest

None

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