

Awareness of Post-Stroke Physiotherapy Rehabilitation Among the General Public of Arunachal Pradesh: An Exploratory Survey

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Abstract:

➤ *Background:*

Stroke is one of the leading causes of long-term disability worldwide. Physiotherapy rehabilitation plays an important role in improving functional recovery, mobility, independence, and quality of life after stroke. However, lack of public awareness regarding post-stroke physiotherapy rehabilitation may delay rehabilitation and negatively affect patient outcomes. In Arunachal Pradesh, limited information is available regarding public awareness about post-stroke physiotherapy rehabilitation.

➤ *Aim:*

The aim of this study was to assess the awareness of post-stroke physiotherapy rehabilitation among the general public of Arunachal Pradesh through an exploratory survey.

➤ *Methods:*

An exploratory survey design was used for the study. The study included members of the general public aged 18-62 years residing in different areas of Arunachal Pradesh. Data were collected using a self-structured questionnaire designed to assess awareness regarding the role, benefits, and importance of physiotherapy rehabilitation after stroke. Demographic variables such as age, gender, and place of residence were also included. The collected data were analyzed using Microsoft Excel 2017.

➤ *Results:*

A total of 385 participants aged 18–62 years participated in the study, with a mean age of 27.73 years. Among them, 54% were female, 46% were male, 57% belonged to rural areas, and 43% were from urban areas. The findings demonstrated high awareness regarding stroke and its signs and symptoms, as 89% of participants were aware of stroke and 97% recognized the importance of seeking immediate emergency care. However, awareness regarding post-stroke physiotherapy rehabilitation was moderate, with only 51% having heard about it and 26% being aware of advanced rehabilitation approaches. Lack of awareness about stroke symptoms and limited access to healthcare facilities were identified as major barriers to timely medical help. Despite limited knowledge regarding advanced rehabilitation, 92% of participants reported that they would recommend physiotherapy rehabilitation for stroke patients, reflecting a positive attitude toward its role in recovery and quality of life improvement.

➤ *Conclusion:*

The study concluded that the general public of Arunachal Pradesh had high awareness regarding stroke and its signs and symptoms, but only moderate awareness of post-stroke physiotherapy rehabilitation and limited knowledge of advanced rehabilitation approaches. Lack of awareness and limited healthcare accessibility were identified as important barriers to timely stroke management and rehabilitation. The findings highlight the need for public education programs and improved accessibility of physiotherapy rehabilitation services, especially in rural areas, to enhance recovery and quality of life among stroke patients.

Keywords: Stroke, Physiotherapy Rehabilitation, Awareness, Post-Stroke Rehabilitation, General Public, Exploratory Survey, Arunachal Pradesh.

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I. INTRODUCTION

A specific neurological deficit brought on by various arterial lesions that impair brain function is called a cerebrovascular accident (CVA), sometimes referred to as a stroke.¹ In adults, stroke is the major factor causing a long-time impairment. The prevalence of hemiplegia is increasing yearly, with significant medical and consequences for society.² Post-stroke, prolonged immobility might have negative effects such as pressure palsies, contractures, and orthopedic issues.³

The worldwide burden of acute ischemic stroke would not be lessened despite improvements in treatment unless significant public health initiatives are made to increase public awareness, particularly among high-risk populations. Primary prevention is therefore essential to reducing the high morbidity rate linked to stroke.⁴ A major cause of death and morbidity in both developed and low-middle income countries (LMICs), stroke is a serious worldwide health concern. LMICs account for 70% of stroke cases, and the ensuing disease burden is higher than in high-income nations. LMICs account for 70% of stroke cases, and the ensuing disease burden is higher than in high-income nations.⁵

In India, the stroke incidence rate for all ages has generally increased from 76 per 100,000 population in 1990 to 88 in 2021. In Arunachal Pradesh the incidence rate was recorded at 63(56-69) per 100,000 in 2021.⁶ The prevalence of stroke in Arunachal Pradesh is 1.4% (N=982) by geographical region and states of India.⁷

One important aspect of stroke rehabilitation is physiotherapy, which focusses on helping stroke survivors regain their general physical function and train them to live more independently.⁸ Physiotherapy is an essential component of stroke survivors' rehabilitation since it enhances their quality of life in motor skills and mobility.⁹ Numerous studies have examined the efficacy of physiotherapy interventions such as task-specific training, early mobilization training, and strength training in stroke rehabilitation.¹⁰

It was determined by the prior literature analysis and related difficulties that raising awareness of physiotherapy for strokes is crucial.¹¹ In order to recover brain functions, rehabilitation depends on neuroplasticity. The human body's constant process of rearranging the neural components in a person's central nervous system in response to internal or external stimuli is known as neuroplasticity. During post-stroke recovery, plasticity processes start activity-dependent brain remodeling and synapse strengthening.³

However, despite the progress made in stroke rehabilitation, there is still a significant knowledge gap, with many patients as well as family members not being adequately informed about post-stroke rehabilitation options

and the importance of their participation in the healing process or function.¹²

Therefore, assessing public awareness regarding post-stroke physiotherapy rehabilitation is necessary to identify knowledge gaps and guide future public health interventions.

➤ *Aim*

To assess awareness regarding post-stroke physiotherapy rehabilitation among the general public of Arunachal Pradesh.

➤ *Objectives*

To identify gaps in knowledge about post stroke physiotherapy rehabilitation among the general population.

II. METHODOLOGY

➤ *Study Design:*

- Exploratory survey design.

➤ *Study Population:*

- General public of Arunachal Pradesh.

➤ *Sample Size:*

- 385 participants.

➤ *Sampling Technique:*

- Snowball sampling.

➤ *Study Duration:*

- One year.

➤ *Inclusion Criteria:*

- Adults aged 18 years and above
- Permanent residents of Arunachal Pradesh
- Community-dwelling individuals
- Smartphone users with internet access

➤ *Exclusion Criteria:*

- Healthcare professionals
- Hospitalized individuals
- Participants unable to understand questionnaire language

➤ *Data Collection Procedure:*

Participants were recruited through online platforms. A Google questionnaire link was distributed using WhatsApp. Electronic informed consent was obtained before

participation. Confidentiality and voluntary participation were maintained.

➤ *Statistical Analysis:*

Statistical analysis was performed by using Microsoft Excel 2019 software. Data were analyzed using descriptive statistics including frequencies and percentages.

III. RESULTS

➤ *Demographic Findings:*

The mean age of respondents was 27.73 ± 8.45 years. Female participants constituted 54% while males constituted 46%. Rural residents represented 57% of respondents.

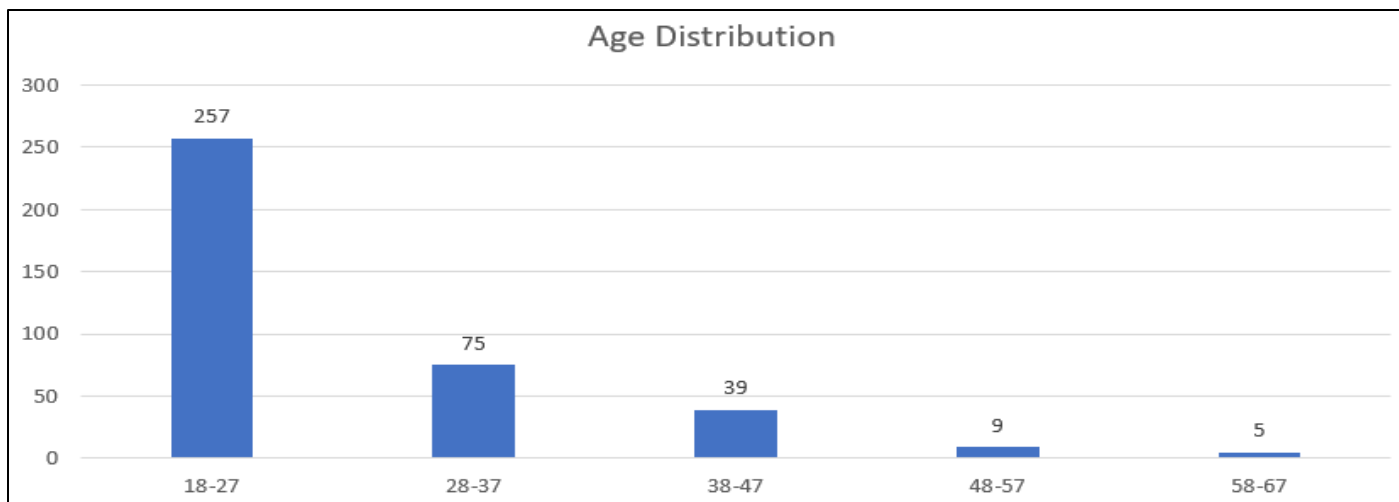


Fig 1 Age Distribution of Participants

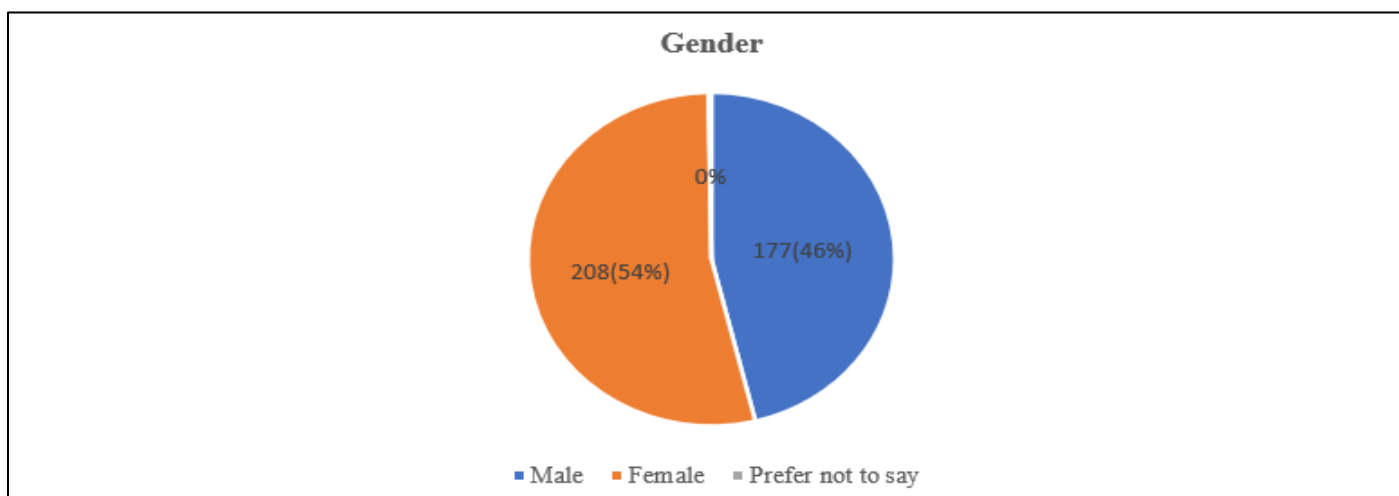


Fig 2 Gender Distribution of Participants.

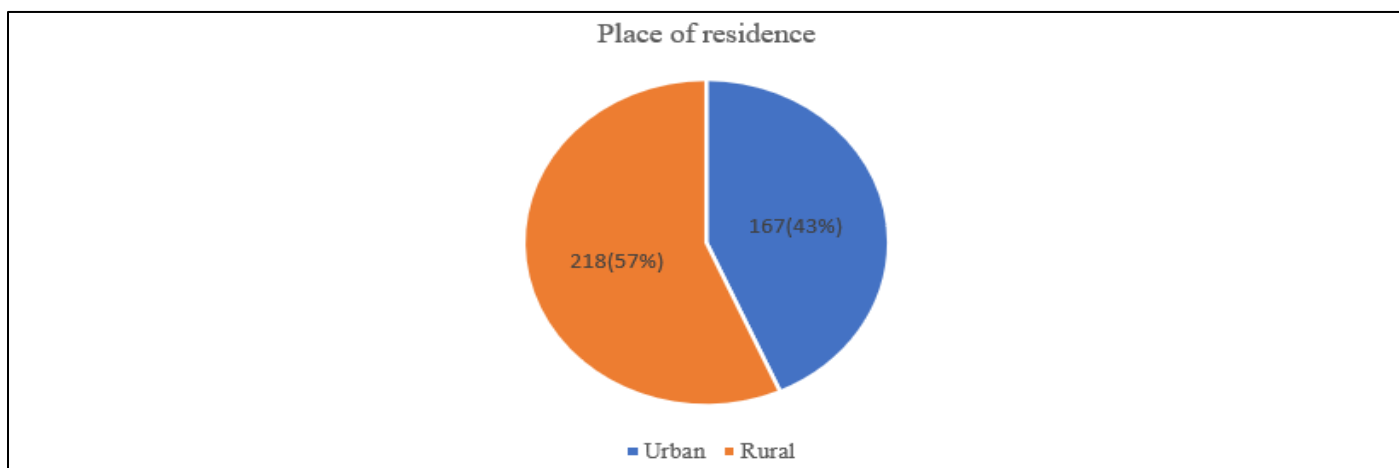


Fig 3 Distribution of Participants' According to the Place of Residence.

➤ *Stroke Awareness:*

A total of 89% participants reported awareness regarding stroke. However, only 47% identified all major warning signs correctly.

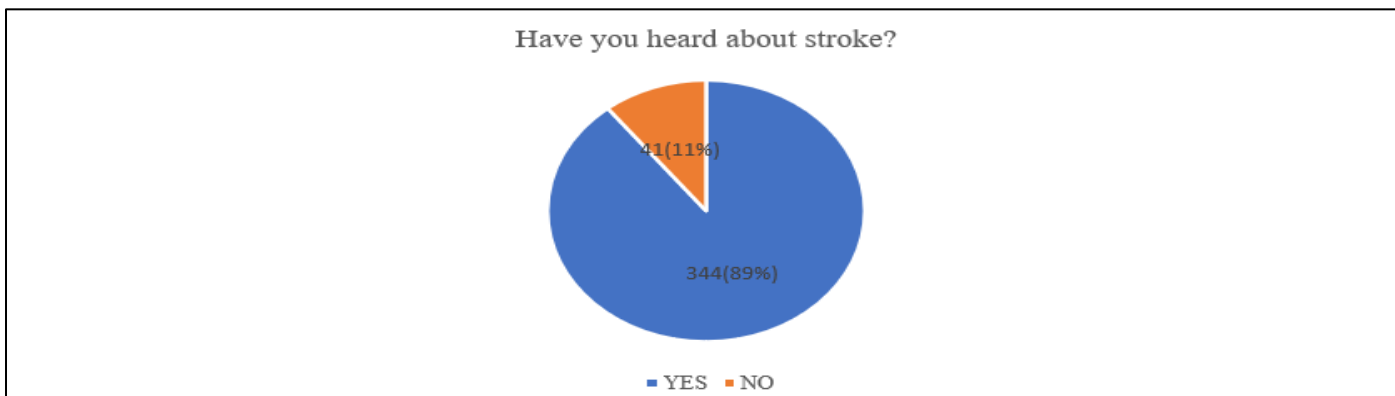


Fig 4 The Pie Chart Illustrates Participants' Awareness of Stroke.

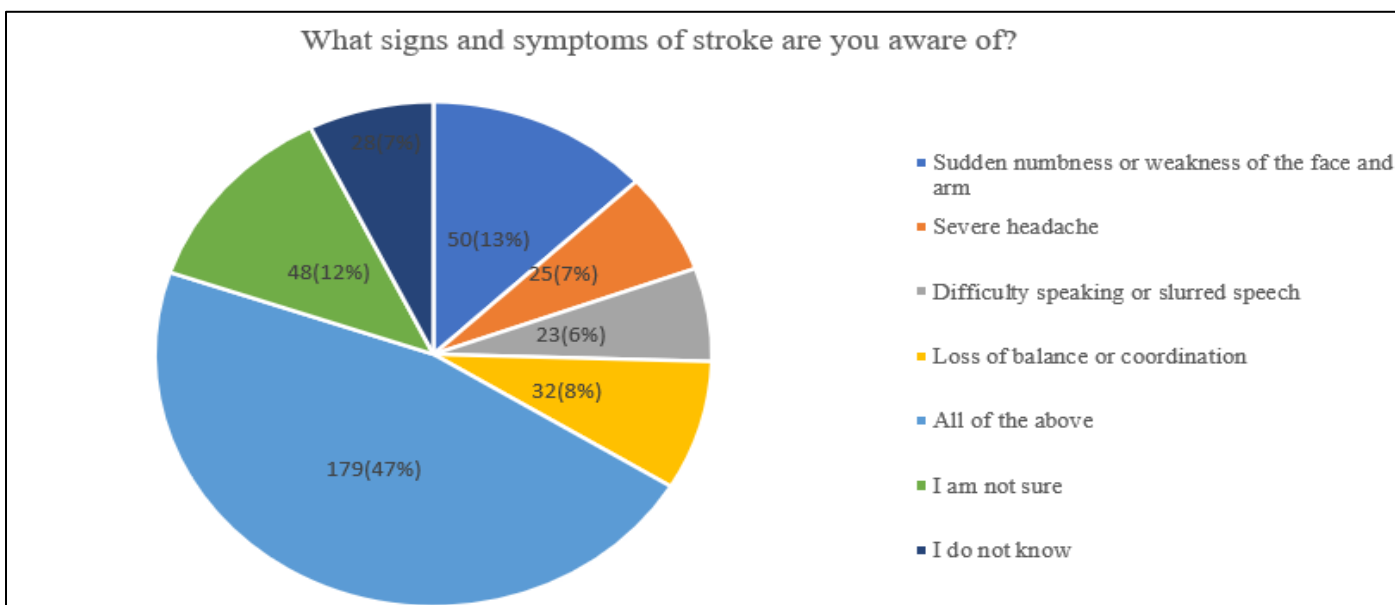


Fig 5 The Pie Chart Illustrates Participants' Awareness of the Signs and Symptoms of Stroke.

➤ *Challenges in Seeking Medical Help:*

Lack of awareness regarding symptoms (32%) and limited healthcare access (20%) were major barriers.

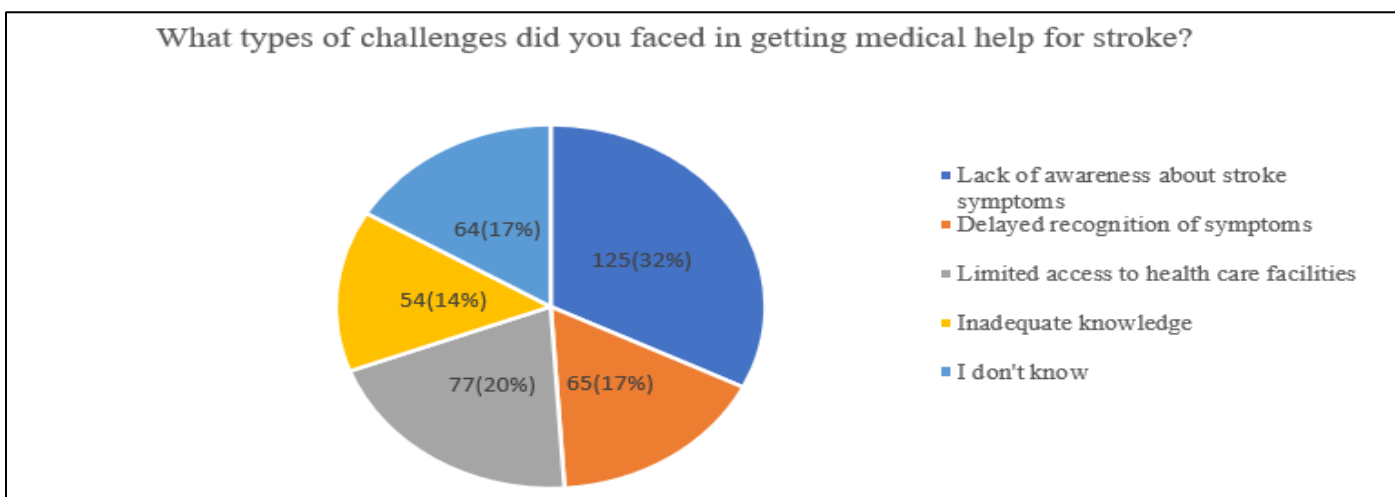


Fig 6 The Pie Chart Illustrates the Distribution of Challenges Faced by the Participants when Seeking Medical Help for Stroke.

➤ *Awareness of Physiotherapy Rehabilitation:*

General physiotherapy awareness was high (79%). However, awareness specifically regarding post-stroke rehabilitation was moderate (51%).

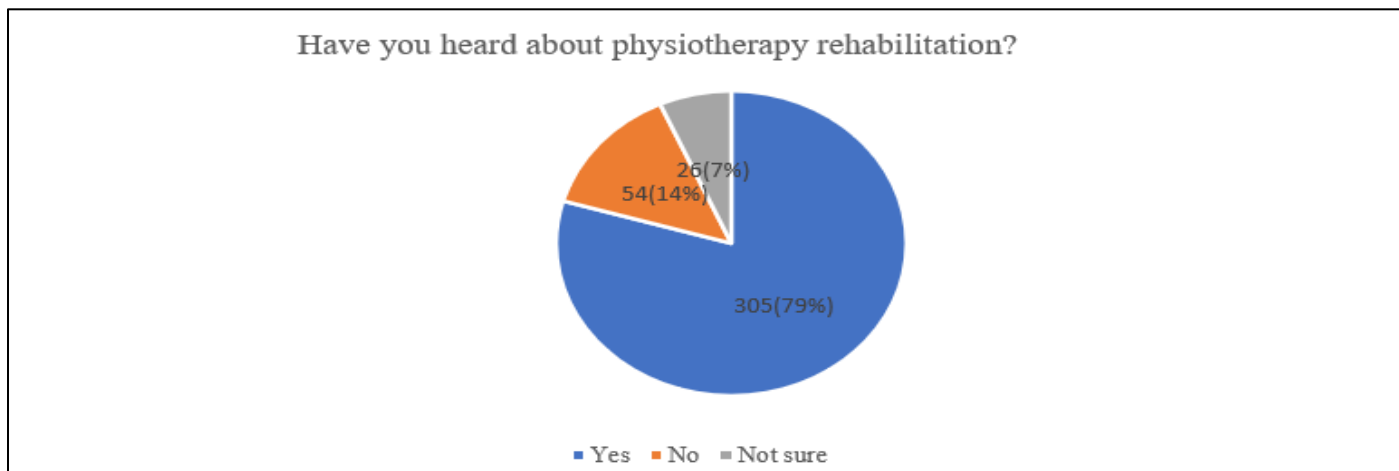


Fig 7 The Pie Chart Illustrates the Level of Awareness Among the Participants Regarding Physiotherapy Rehabilitation.

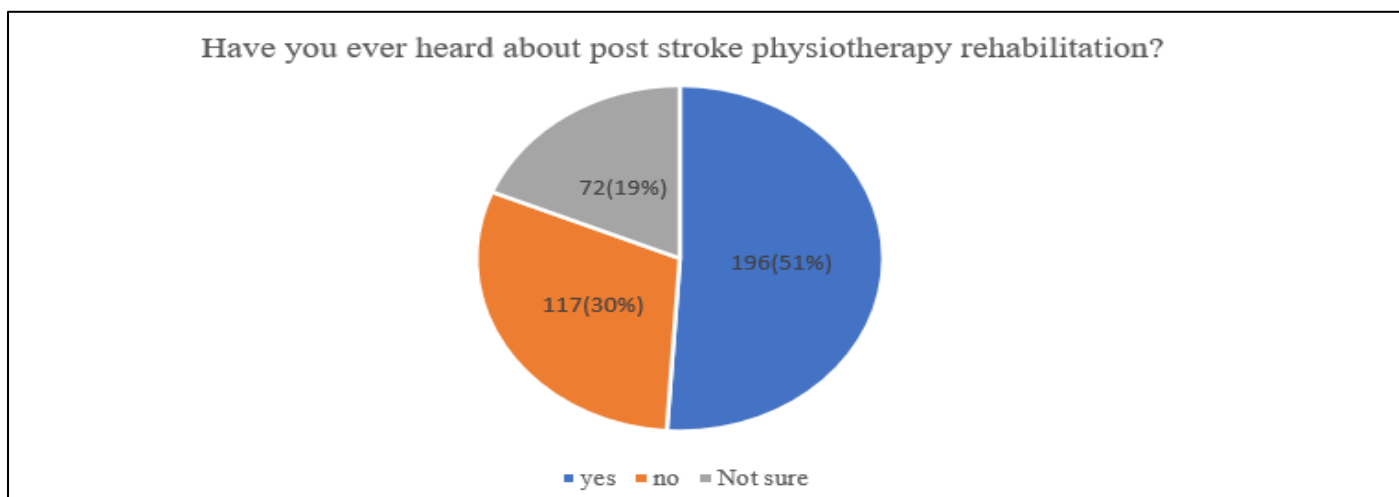


Fig 8 The Pie Chart Illustrates the Participants' Level of Awareness Regarding Post-Stroke Physiotherapy Rehabilitation.

➤ *Knowledge of Rehabilitation Methods:*

Exercise therapy was the most recognized rehabilitation approach (74%). Awareness regarding home-based rehabilitation remained moderate (36%).

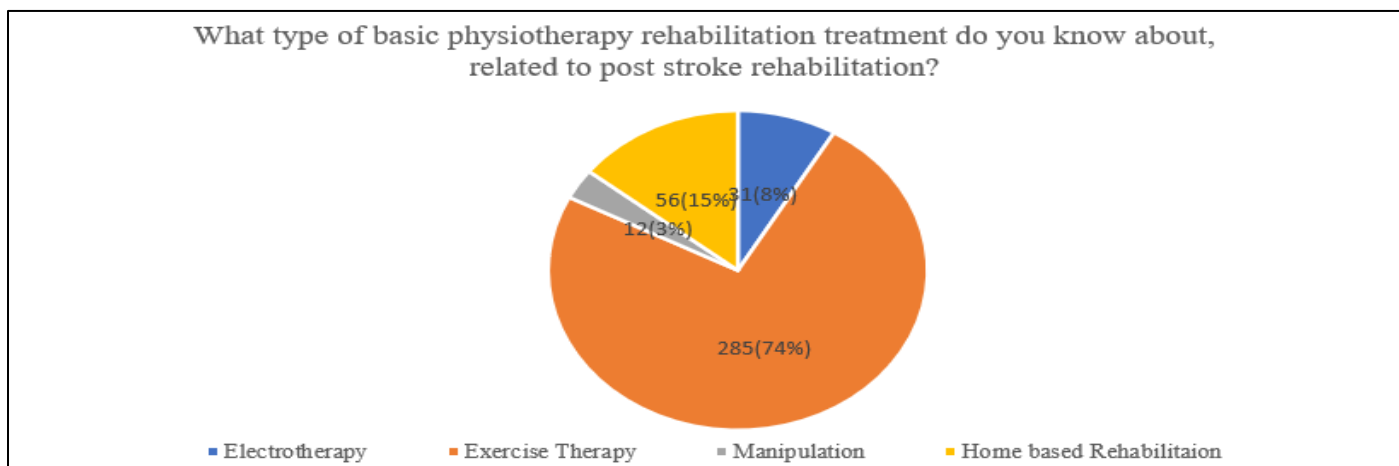


Fig 9 The Pie Chart Illustrates the Participants' Awareness Regarding Basic Physiotherapy Rehabilitation Treatment for Post-Stroke Recovery.

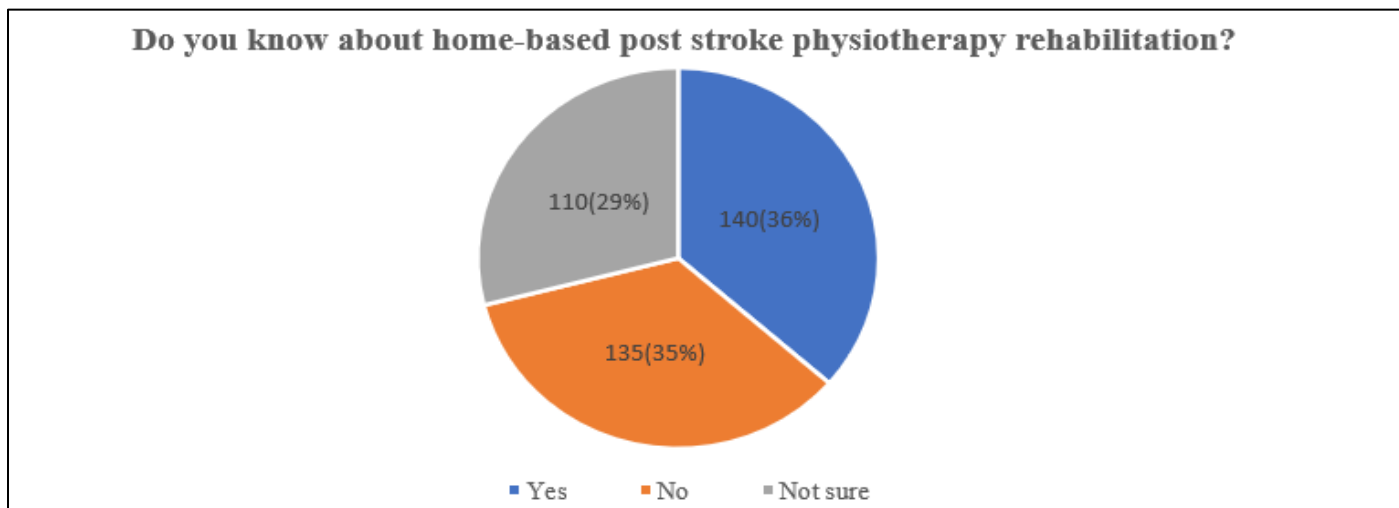


Fig 10 The Pie Chart Illustrates the Participants Awareness of Home-Based Post-Stroke Physiotherapy Rehabilitation.

➤ *Advanced Rehabilitation Awareness:*

Only 26% participants reported awareness regarding advanced rehabilitation approaches. Most participants (68%) were unaware of modern rehabilitation technologies.

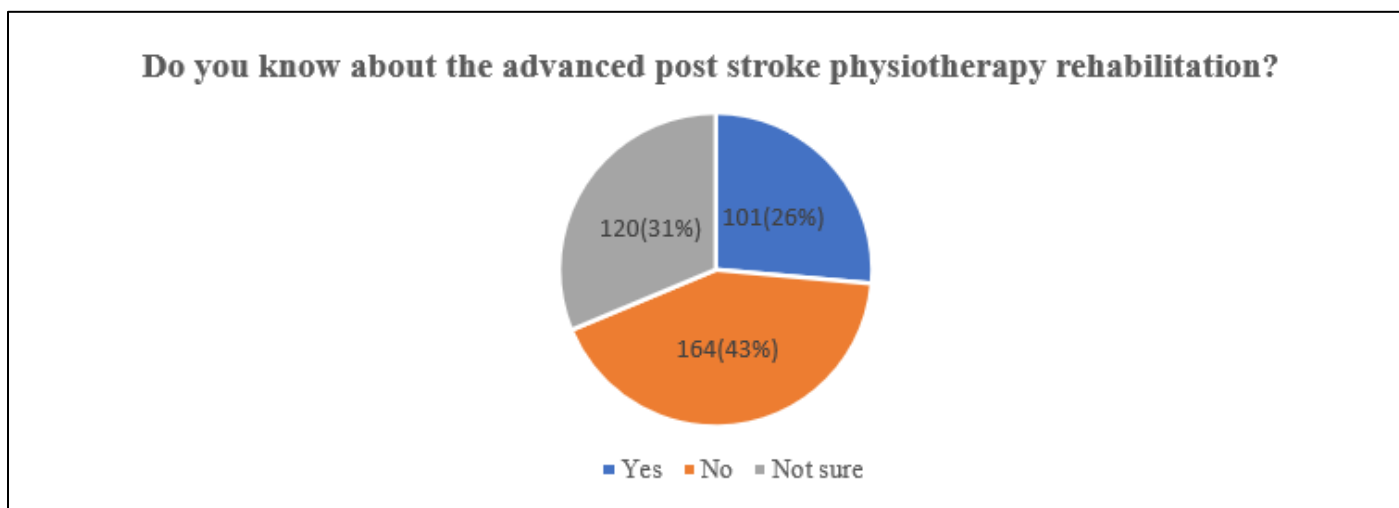


Fig 11 The Pie Chart Illustrates the Participants' Responses Regarding their Knowledge of Advanced Post-Stroke Physiotherapy Rehabilitation.

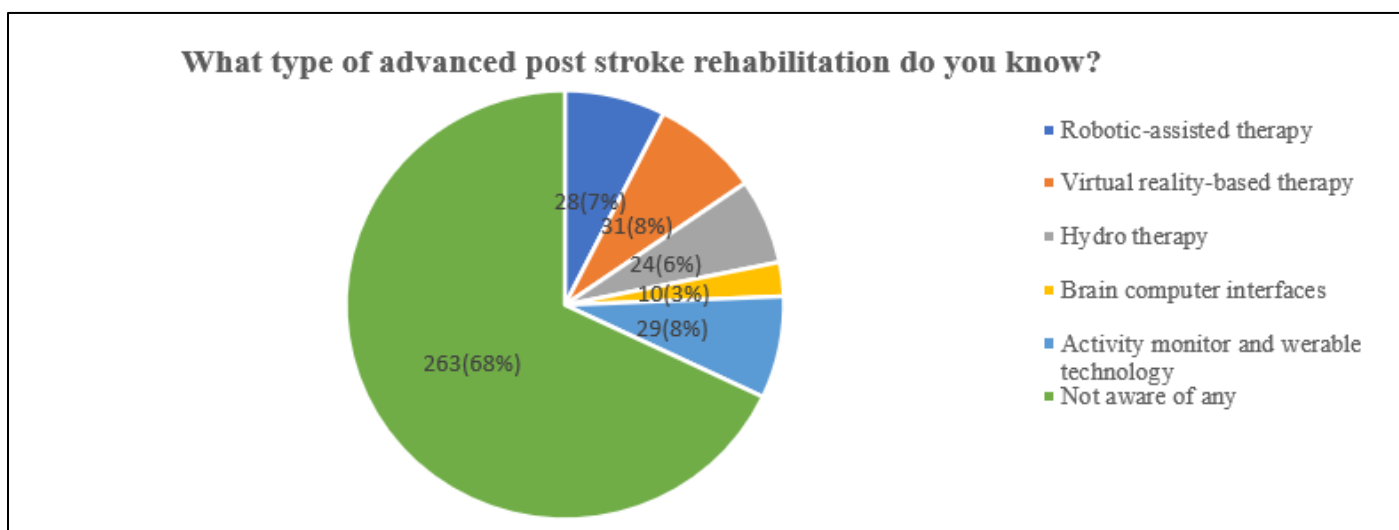


Fig 12 The Pie Chart Illustrates the Participants' Familiarity with Various Advanced Rehabilitation Technologies.

➤ *Attitude Toward Rehabilitation:*

Most participants (92%) reported willingness to recommend physiotherapy rehabilitation to stroke survivors.

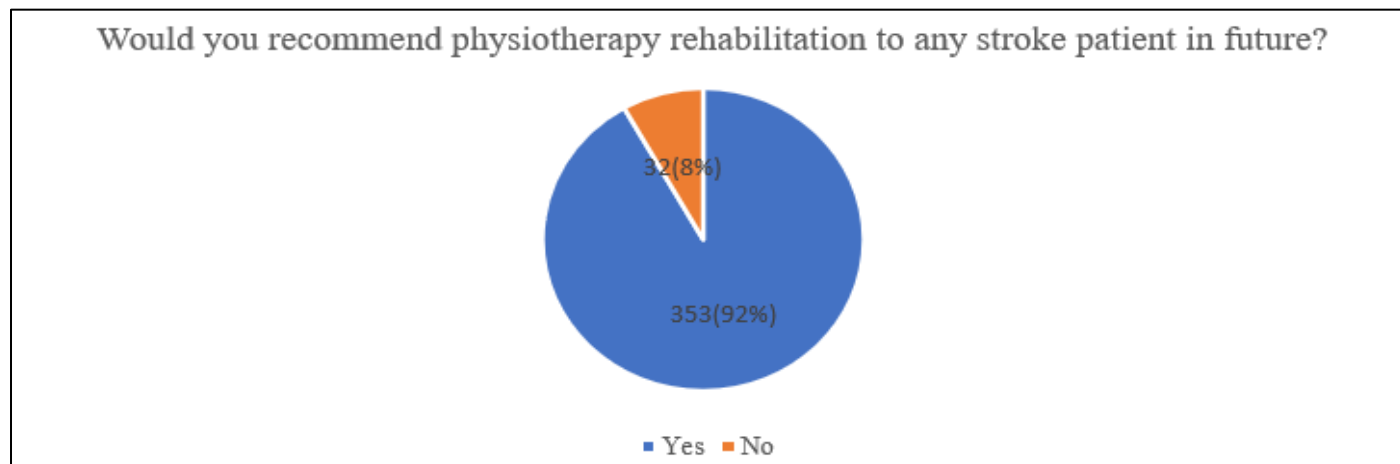


Fig 13 The Pie Chart Illustrates the Participants' Responses Regarding the Willingness to Recommend Physiotherapy Rehabilitation to Stroke Patient in the Future.

IV. DISCUSSION

The present study was conducted with the objective to evaluate the awareness of stroke, challenges in getting medical help for stroke, basic physiotherapy rehabilitation related to post stroke and advanced post-stroke physiotherapy rehabilitation among the general public of Arunachal Pradesh. A total of 385 participants, participated in the study out of which 54% were female and 46% were male. Regarding the place of residence, 57% participants were from rural area and 43% were from urban areas. Age group of the respondents were between the age 18 to 62 years and the mean age was 27.73.

The study result revealed that 89% of the total participants were aware of stroke and 11% of respondents were not aware, demonstrating that a high number of the general public were aware of stroke. Since the inclusion criteria includes only those participants who can read and understand the language, it may be interpreted that even among literate people, there is a continuous lack of basic neurological health literacy. Similarly, findings were reported by Sai Sirisha et al. which showed that more than 56.9% of participants were aware of what stroke is, indicating a good awareness about stroke.¹³ A study by Dr Anjali Chawla et al. noted a moderate level of awareness among adults in Ahmedabad city.¹⁴ However all of these studies concluded that, even though people had a general awareness of stroke most of them were not aware of the risk factors and the signs and symptoms related to stroke. The current study also showed that only 47% of participants were aware of all the signs and symptoms of stroke, 34% of participants are aware of one of the signs and symptoms and 19% of participants were not aware of any signs and symptoms. This result may suggest that even though the public were aware of stroke sign and symptoms, most of the participants were either not aware or partially aware of stroke signs and symptoms. In this study, 97% responded that it is important to call emergency services immediately when the stroke is suspected. This study aligns with the study reported by Padmakumar Balasundaram et al.

compared prior Indian studies, where 98% of participants said that a person who has had a stroke needs immediate care.¹⁵ The most commonly reported challenge for getting medical help was lack of awareness about stroke symptoms, reported by 125 participant (32%) and limited access to healthcare facilities among 77 participants (20%). This indicates that insufficient awareness and accessibility issues were the major barriers to seeking timely medical help for stroke. These findings aligned with the study conducted by Bakka A. et al. that such gaps frequently arise from more general cultural and structural issues, such as a lack of health insurance, poor access to specialized care, and a lack of healthcare services in rural areas.¹⁶

In this study 196 participants (51%) of the respondents had heard about post-stroke physiotherapy rehabilitation which is similar to a study done by Vijay Janagama et al. This highlights the need for increased public education and awareness programs on the importance of post -stroke physiotherapy rehabilitation.¹² For stroke survivors living in the community, active physiotherapy tends to enhance objective physical activity.¹⁷ The majority, 226 participants (59%), reported that physiotherapy services are available in their area. The findings indicate that more than half of the respondents are aware of physiotherapy facilities in their locality. However, a considerable proportion of participants either lacked awareness or were uncertain about the availability of these services. In the study done by Md. Mizanur Rahman et al., the majority of respondents (77%) believed that Bangladesh's semi-urban and low-resource settings lacked high-quality, the most advanced physiotherapy facilities.¹⁸ and almost three-quarters of India's population still lives in rural regions with limited primary care services.¹² Among the respondents, only 101 participants (26%) reported that they were aware of advanced post-stroke physiotherapy rehabilitation which is aligned with the study done by Vijay Janagama et al where 26% of participants were aware of advanced post-stroke physiotherapy rehabilitation.¹² The findings suggest that awareness of advanced post-stroke physiotherapy rehabilitation is relatively low among the

respondent, as less than one-third reported having knowledge about it. Among the total participants, 190 respondents (49%) believed that rehabilitation centres offer better recovery outcomes. In comparison, only 25 respondents (7%) disagreed with this view, while 170 respondents (44%) were not sure. These findings indicate nearly half of the participants favored physiotherapy rehabilitation centres over home-based care for post-stroke recovery. However, another study by Yu-Chung Chen et al. demonstrated that in terms of mobility, self-care, pain, discomfort, depression/anxiety, and quality of life improvement, the hospital-based group outperformed the home-based group.¹⁹ Prior community studies, conducted by Nik Nasishah Nik Ramli et al. discovered that about 60% of respondents thought it was appropriate to take the stroke patient to a hospital or clinic.²⁰ In this study, the majority, 353 respondents (92%) stated that they would recommend physiotherapy rehabilitation for stroke patients. These findings demonstrate a highly positive attitude toward physiotherapy rehabilitation among the participants. The overwhelming support for recommending physiotherapy suggests strong confidence in its effectiveness in improving recovery and quality of life among stroke patients.

➤ *Strengths*

This study has a number of advantages. Stroke is a leading cause of disability, and improving recovery and quality of life requires knowledge of post-stroke physiotherapy rehabilitation. The study can find gaps in the general public's knowledge, attitudes, and beliefs because it is an exploratory survey. In order to provide a more comprehensive understanding of the community, the survey evaluates public awareness rather than only that of patients or healthcare professionals. The results can be used as baseline information for upcoming research projects, intervention initiatives, and cross-regional comparisons.

V. LIMITATIONS

- Participants' responses may be influenced by personal understanding, memory or willingness to answer accurately.
- The sample size may be limited due to time and resources constraints.
- The study may not include all the districts or remote areas of Arunachal Pradesh.
- Variations in educational background and language understanding among participants may affect the accuracy of responses.

VI. CONCLUSION

The present study assessed the awareness of post stroke physiotherapy rehabilitation among the general public in Arunachal Pradesh. The findings showed that the majority of the participants (89%) were aware about the stroke and but only few participants (47%) were fully aware of its signs and symptoms. Moderate level of participants (51%) was aware of the post-stroke physiotherapy rehabilitation, with its basic and advanced rehabilitation, notable gaps in detailed knowledge and confidence regarding its role still persists.

Awareness level was found to be moderate overall, with a significant portion of the population demonstrating only a basic understanding about post-stroke physiotherapy rehabilitation. The findings indicate that more than half of the respondents i.e. 59% are aware of physiotherapy facilities in their locality. These findings highlight the urgent need for improved community education, increase public health initiatives, awareness campaign and stronger collaboration to bridge existing knowledge gaps and promote early physiotherapy rehabilitation for stroke survivors. The study also highlights the need of promoting awareness about stroke signs and symptoms, so as to provide better understanding of early intervention and Physiotherapy rehabilitation.

RECOMMENDATIONS

- Conduct community awareness programs
- Increase rehabilitation outreach services
- Strengthen rural physiotherapy access
- Promote early referral systems

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