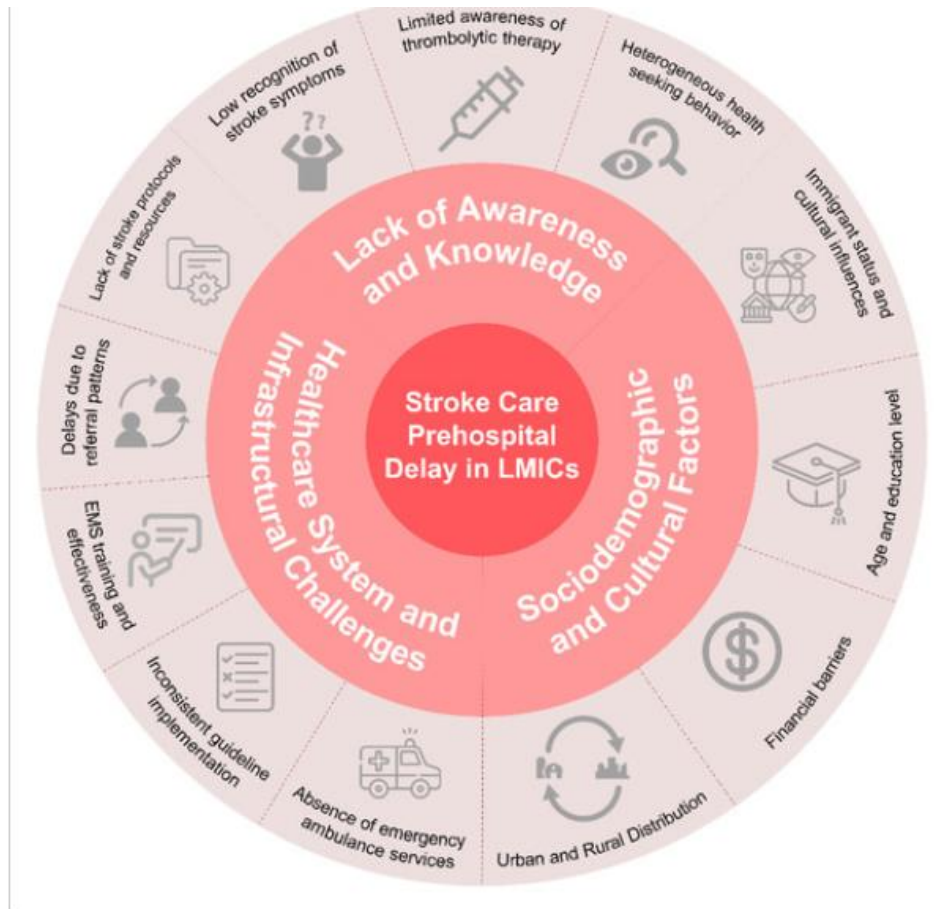


Stroke Awareness in Rural Nepal: Evidence, Gaps, and the Way Forward

AUTHORS & AFFILIATIONS

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BACKGROUND



Global Insights on Prehospital Stroke Care: A Comprehensive Review of Challenges and Solutions in Low- and Middle-Income Countries.

Elvan Wiyarta et al, *J. Clin. Med.* 2024, 13(16), 4780

- Limited public awareness of stroke is a major barrier to improving prehospital stroke care in low- and middle-income countries (LMICs), where the burden of stroke is high.

OBJECTIVES

- This study aims to assess the awareness of stroke symptoms, risk factors, and emergency response among patients and visitors in a tertiary care hospital of a remote province in Nepal.

METHODOLOGY

- Cross-sectional study
- Setting - Province Hospital, Surkhet, a tertiary care center in Karnali Province, Nepal
- Duration - November 2024 to January 2025.

Methodology

- Study population/Inclusion criteria
 - Adult patients and visitors (≥ 18 years old)
 - Visited medical outpatient department of the hospital for health checkup for general health issues.
- Exclusion criteria - Individuals unable to provide consent or complete the questionnaire due to cognitive impairment.

Sample Size

- The sample size was calculated using the formula for cross-sectional studies, assuming an expected awareness level of 57% based on a similar study done in India, a 95% confidence interval, and a margin of error of 5%.
- The target sample size was 377 participants.

- Convenience sampling method
- Written informed consent
- The questionnaire was face to face administered by a trained interviewer and all questions were open ended.

The Questionnaire

- Data were collected using a structured questionnaire
 - Awareness about stroke
 - Knowledge of symptoms
 - Knowledge of risk factors,
 - Knowledge of emergency response.
- The survey tool was adapted from the questionnaire built by Hickey et al. It was translated to Nepali language and back-translated to English language by the study team to ensure linguistic accuracy.
- Pretested on a small sample of target population (n=20) to ensure clarity and comprehensibility
- Minor modifications were made to enhance cultural relevance to Nepali context

- The primary outcomes were awareness of stroke symptoms and risk factors, measured as the percentage of correctly identified symptoms and risk factors.
- Ethical approval was obtained from the Nepal Health Research Council (NHRC), (Proposal registration number 558_2024; Approval reference number 845).

Analysis

- Statistical analysis - SPSS version 26 (IBM SPSS Statistics, IBM Corporation, 2019).
- Descriptive statistics (frequencies and percentages) were used to summarize demographic data and levels of awareness.
- To assess associations between demographic variables and awareness levels, chi square tests were used. A p-value < 0.05 was considered statistically significant. Only the complete questionnaires were analyzed and incomplete questionnaires excluded.

RESULTS

Approached - 425

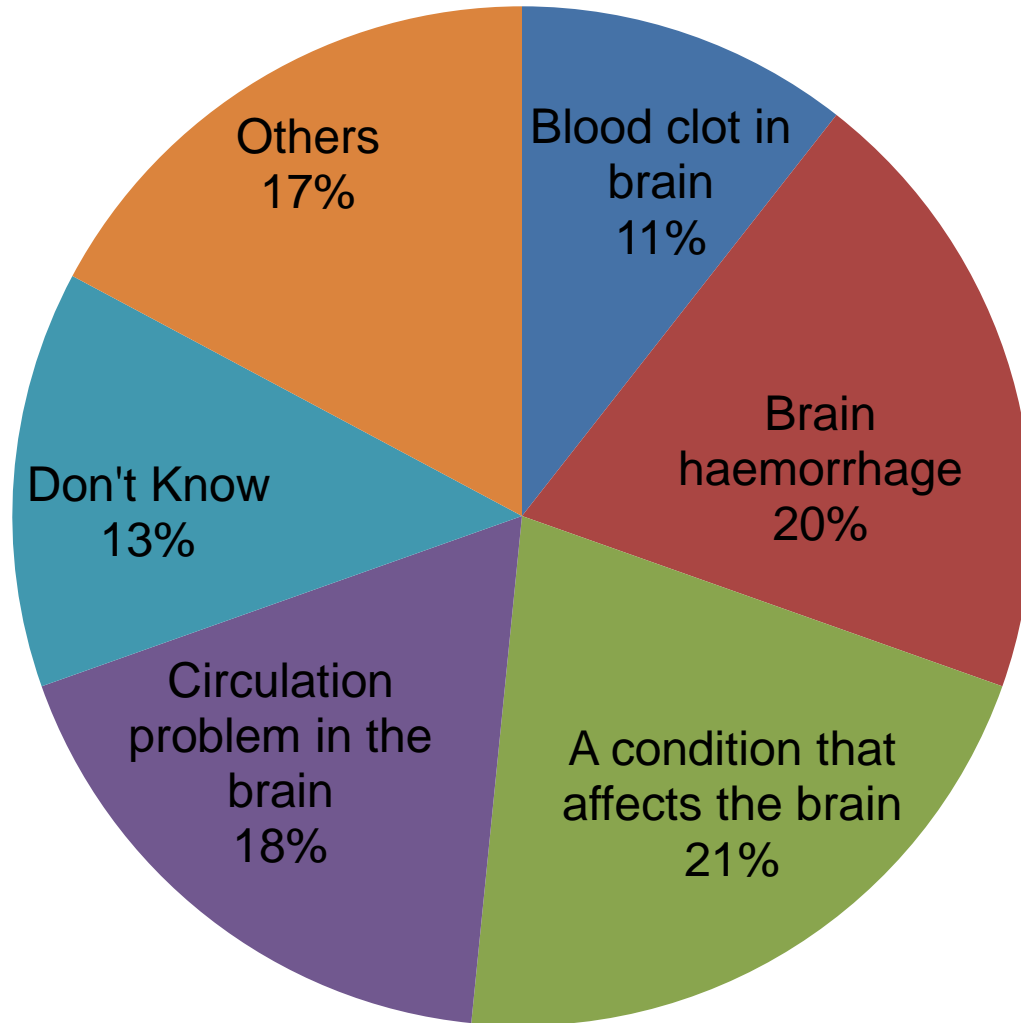
Consented - 390

Complete data - 378

RESULTS

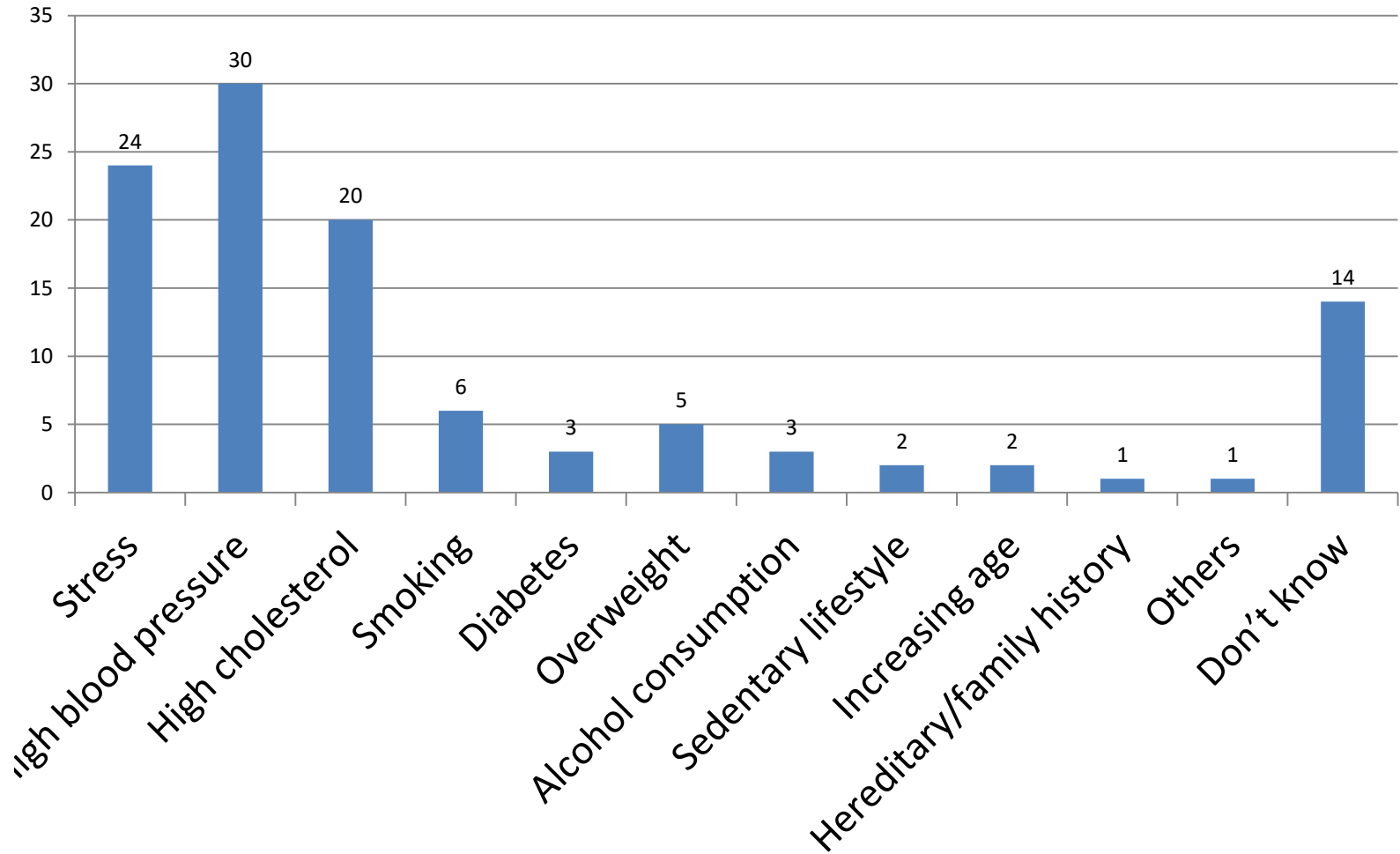
AGE GROUP	<20	19(5%)
	21-40	220(58%)
	41-60	103(27%)
	>61	36(10%)
	Total	378(100%)
SEX	Male	188(49.7%)
	Female	190(50.3%)
MARITAL STATUS	Married	260(69%)
	Unmarried	118(31%)
RESIDENCY	Rural	223(59%)
	Urban/Suburban	155(41%)
OCCUPATION	Business	153(41%)
	Farmers	122(32%)
	Employees	102(27%)
COMORIBIDITIES	HTN	123(32.5%)

AWARENESS OF STROKE



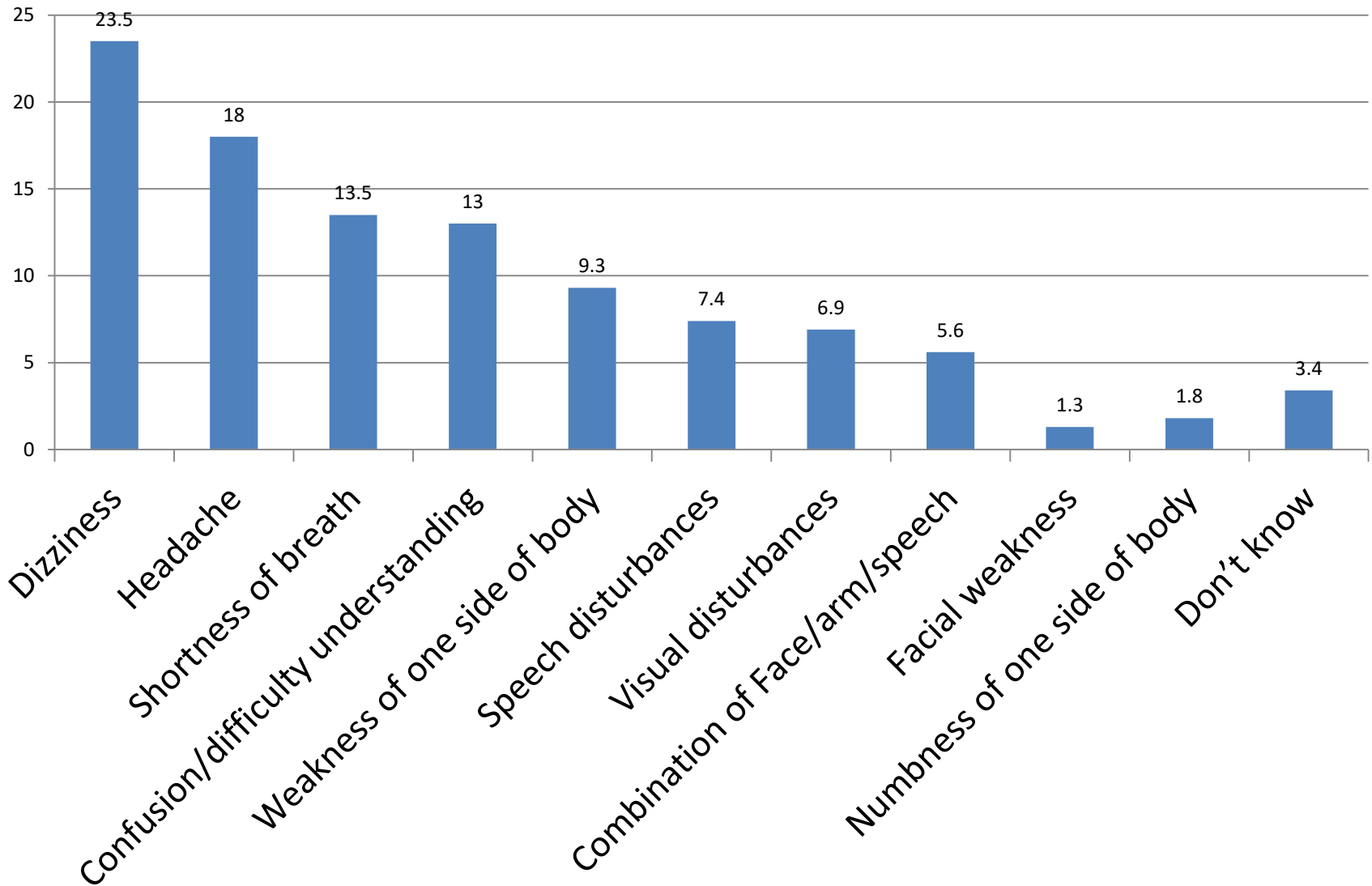
OVERALL , 49 % WERE AWARE ABOUT STROKE

AWARENES OF RISK FACTORS (in %)



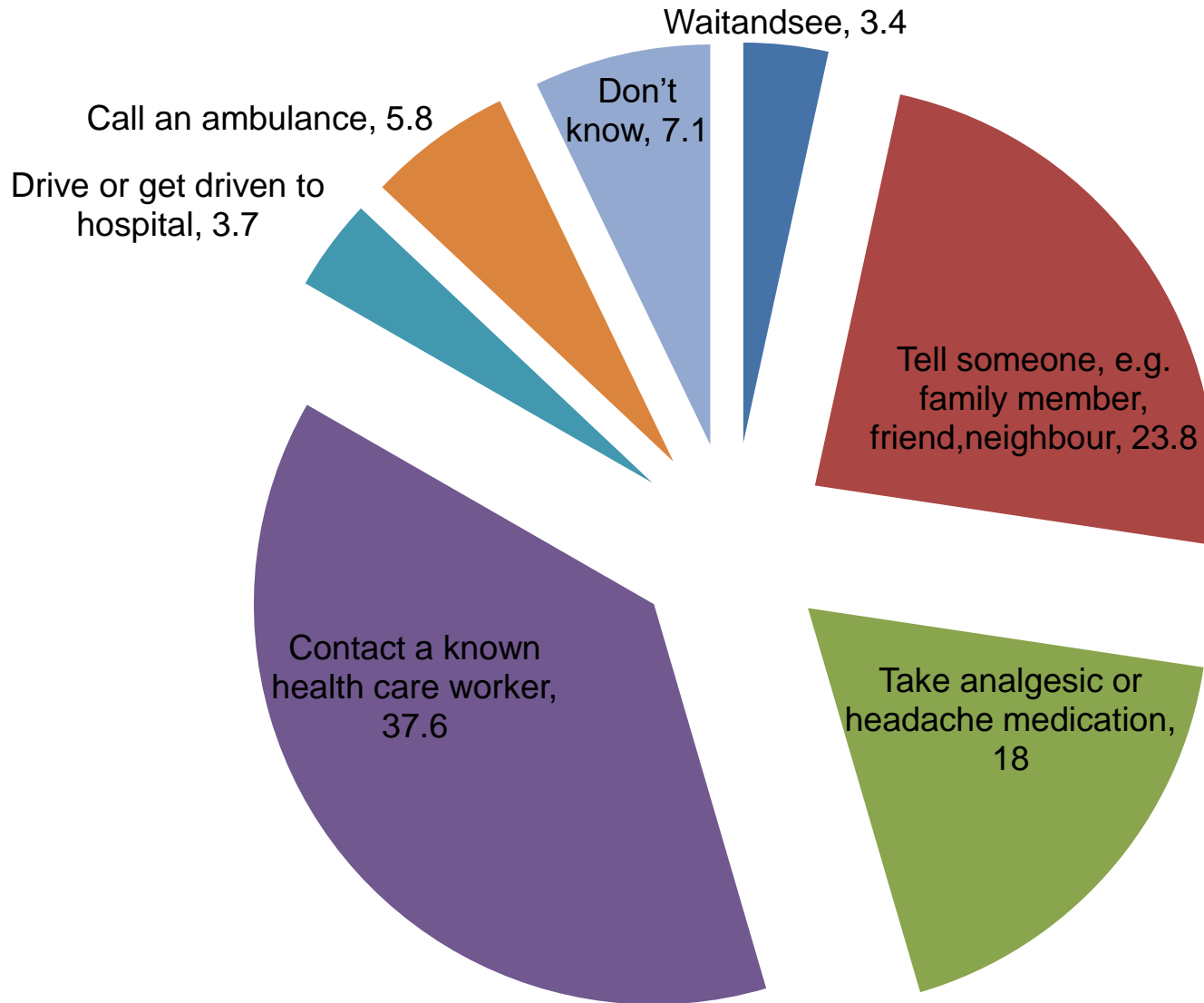
71.6% (261) could identify at least
one risk factor of stroke

KNOWLEDGE OF SYMPTOMS OF STROKE



Overall 78 participants(20.6%) could correctly identify at least one hall mark warning sign of stroke and 317 participants (83.8%) could identify at least one warning sign of stroke. To be confirmed by Namobuddha.adressed

KNOWLEDGE OF RESPONSE TO AN ACUTE EVENT OF STROKE (%)



RESULTS

- 187(49.5%) believed that it was not possible to reduce the extent and effect of stroke.
- Among the participants who believed that any treatment modality could reduce the extent of stroke, 99 (26.2%) respondents responded with antihypertensives as medication or treatment to reduce the extent or effect of stroke.

RESULTS

- 99 (26.2%) of respondents knew or believed that physiotherapy could reduce the effect of impairment in stroke
- 2.6% recognized occupational therapy as a rehabilitative measure.
- When asked about chances of a repeated stroke, 48.4% believed that it was less likely to have a repeated stroke, and 64(16.9%) respondents believed that having a repeated stroke would be likely.
- Additionally, 17 participants (4.5%) reported awareness of stroke rehabilitation services.

RESULTS

- Pharmacological treatment options were poorly recognized
 - Aspirin named by 12(3.2%)
 - Warfarin named by 7 participants(1.9%)
- Control of hypertension and optimization of blood sugar levels could be identified by 65(17.2%) and 35 (9.3%) participants respectively.

CONCLUSION

- 49% of respondents reported being aware of stroke
- Recognition of classical stroke symptoms and modifiable risk factors was limited.
- Hallmark signs including unilateral weakness, speech disturbance, and visual impairment were less commonly recognized.
- Except for hypertension, awareness of other modifiable risks—such as smoking, diabetes, and alcohol use—was notably low.

TAKE HOME MESSAGE

- The identification of deficits in symptom recognition and knowledge offer a practical foundation for prioritizing interventions and strategically strengthening prehospital stroke services in Karnali and similar resource-limited settings; and underscore the urgent need for targeted awareness and education campaigns in Nepal.



Dr. Khechar N Paudel, has a decade long history of serving the Karnali Province as head of department of internal medicine in Province Hospital, Surkhet.

He is part of World Stroke Organization, Future Stroke Leaders Program, and involved in various national and international stroke research. He is also the provincial head of Nepal Stroke Association.