

Assessment of ownership, frequency of smart device use and the acceptability of digital health data sharing among hypertensive patients visiting a tertiary care hospital in Nepal

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BACKGROUND

Digital Connectivity: A Foundation for Modern Public Health



Internet Penetration

73.2% Worldwide
56% (16.6 million users)
in Nepal (*late 2025*)



Mobile Phone Access

85% of households own
smartphones



Wearable Devices

Wearable electronics
market is projected to
grow significantly from
2024 to 2030

Relevance to Hypertension



1. Burden

- In Nepal, > 20% of the country's population above 15 years suffers from hypertension
- Second leading risk factors for total deaths
- Prevalence of hypertension has been steadily rising

2. Challenge

Despite the availability of effective treatment options, challenges due to inconsistent monitoring and delays in intervention.

3. Digital Health Potential

Enhanced medication adherence, remote blood pressure monitoring, real-time clinical feedback, support for lifestyle modifications such as improved physical activity and dietary behaviors





Research Gap

Lack of evidence on patients' level readiness and willingness for health data sharing

Lack of studies assessing the acceptability of sharing different types of health data

No integrated assessment of smart device ownership and usage patterns in hypertensive patients

Objective

To assess smart device ownership, usage patterns, and acceptability of digital health data sharing among hypertensive patients attending a tertiary hospital in Nepal.

METHODOLOGY



Study design

A cross-sectional, hospital-based study

Sampling Technique

Consecutive Sampling

Sample size

394

Study Period

July and August 2025

Study Location

OPD of Manmohan Cardiothoracic Vascular and Transplant Centre (MCVTC), Kathmandu, Nepal

Study Population

Hypertensive patients

Inclusion Criteria



- Participants who are 18 years and above
- Patients who have been diagnosed with hypertension



Blood pressure measurement-Validated automatic monitor (**Omron HEM-7120**)

The **average of three readings** was used

Hypertension : **systolic BP ≥ 140 mmHg**

and/or **diastolic BP ≥ 90 mmHg**

Those who were currently taking **antihypertensive medication**

Patients with heart failure and mental health conditions, and pregnancy were excluded from the study.



DATA COLLECTION

1

Technique

Face-to-face interviews, 25–30 minutes each

2

Carried out by

Trained undergraduate public health students

3

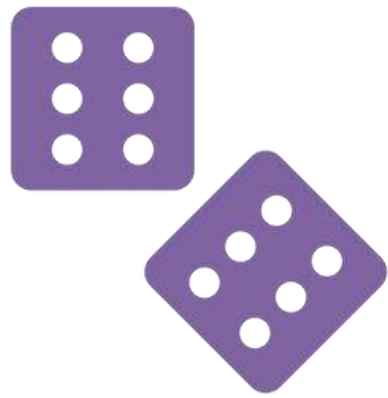
Tool

Smartphone Health Assessment for Digital Engagement

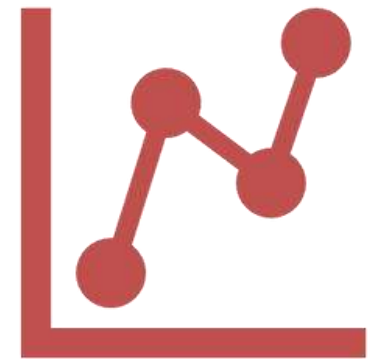
Statistical Analysis



- The statistical software SPSS version 27 was used for data analysis.
- Descriptive statistics were applied for frequencies & percentages.



- Independent samples t-tests were applied to compare the mean of health sharing willingness scores across groups.

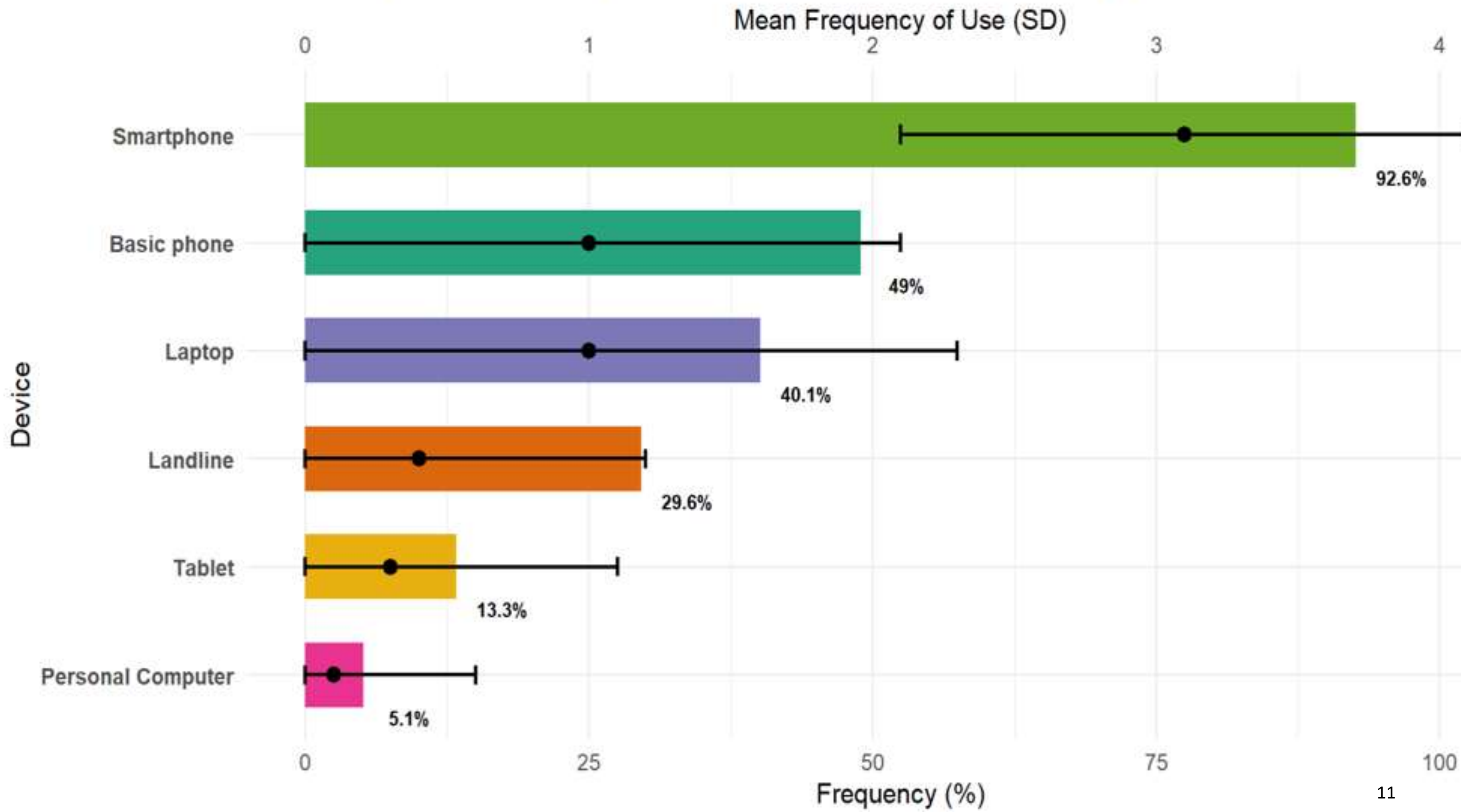


- Multivariate linear regression to estimate associations.



FINDINGS

Ownership and Frequency of Use of Communication Technology



Digital Engagement in Health

Daily Internet access at home



Engagement in Digital Health Tracking



Primary device for accessing the Internet



Used a smart watch in the last 6 months



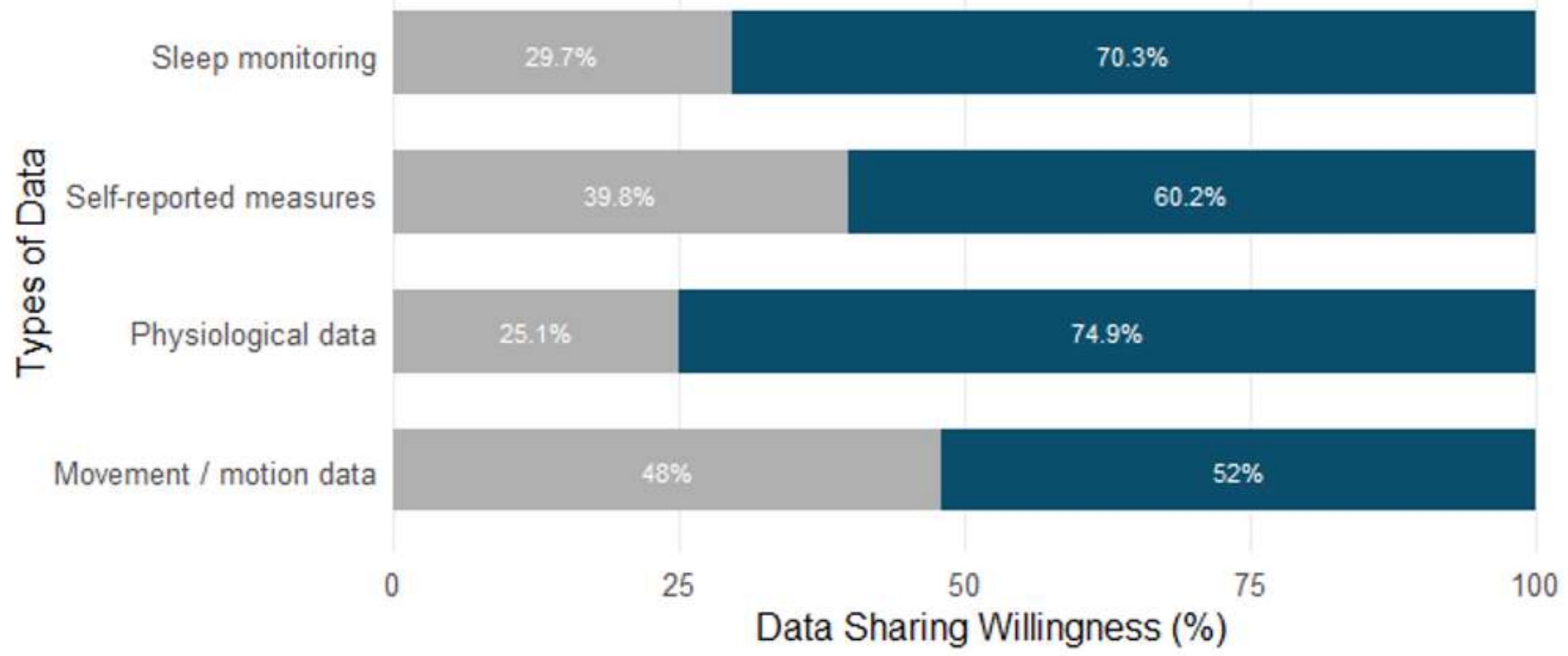
Used the internet to search for health information



0 25 50 75 100

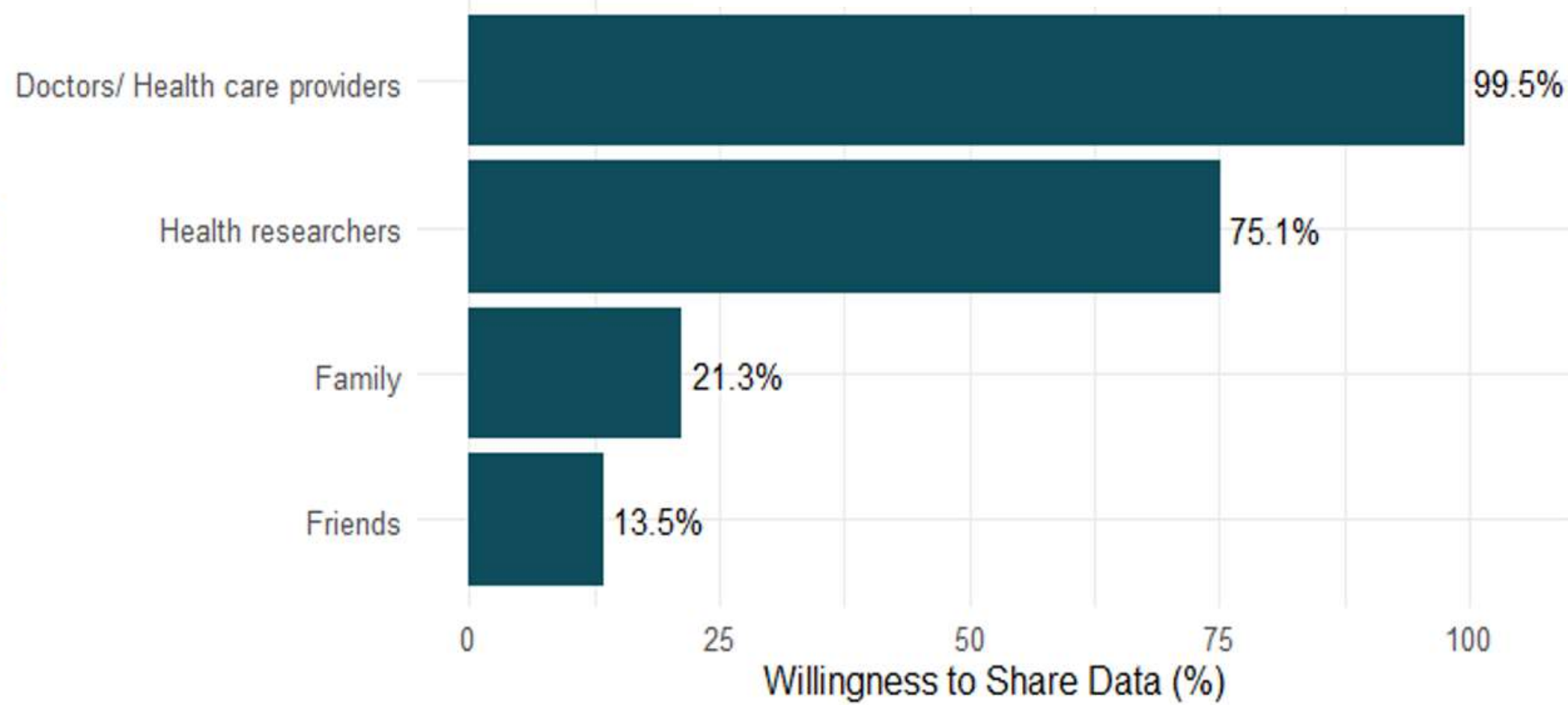
Percentage (%)

Willingness to Share Data according to Data Type



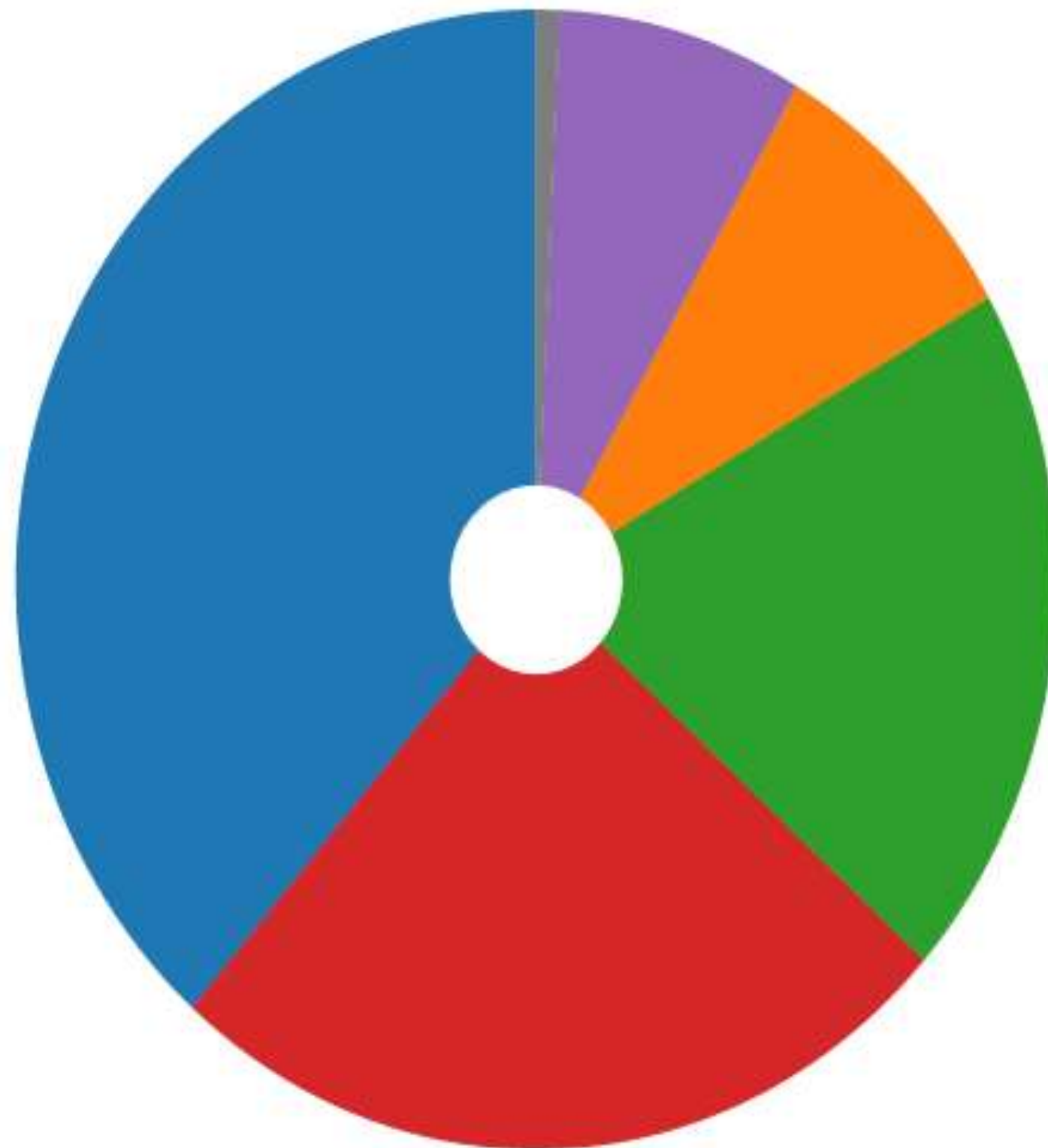
Willing Not willing

Recipients



Willingness to Share Data with Different Recipients

Concerns for Sharing Smart Device–Collected Health Data



Concern for data sharing

- Privacy concerns (70.8%)
- Potential for data misuse (45.7%)
- Data is too personal to be shared (36.5%)
- Data collection requires too much effort (15.5%)
- Concern about data storage safety (14%)
- I just don't want to share my data (1.3%)

Factors Associated with Willingness to Share Health Data

Variable	Unstandardized Beta	Standard Error	Standardized Beta	t	P value
Family	-0.97	0.39	-0.12	-2.489	0.013*
Education level	2.01	0.63	0.17	3.197	0.002*
Monthly household income	1.10	0.37	0.14	2.909	0.004*
English Language Proficiency	0.08	0.40	0.11	2.133	0.034*
Smartwatch usage in past 6 months	1.12	0.56	0.09	1.973	0.049*

LIMITATION

01

REPORTING BIAS

Potential response bias due to self-reported data

02

LIMITED GENERALIZABILITY

The study was conducted in a tertiary care hospital in Kathmandu

03

CONSECUTIVE SAMPLING

Participants available on study days may not be representative

Key Takeaways

> High digital readiness

- Smartphone with internet ownership- 92.6%
- Daily internet access- 95.9%

> High willingness to share data

- 99.5% willing to share health data with health care providers
- 75% willing to share with researchers

> Concern of data sharing

Privacy as their primary concern, followed by fear of data misuse

> Digital divide

Lower-income, illiterate, joint-family, and non-English-speaking patients had significantly lower willingness

> Call for Inclusive Interventions


- Improve **digital health literacy** for patients with low literacy
- Develop **multilingual platforms** in Nepali
- Ensure transparent data governance and strong **privacy protections**



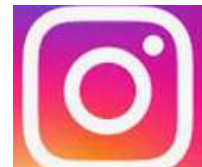
Hi!

I am **Sandhya Niroula**, a **Public Health Graduate** from **CDPH, IOM** and an early-career researcher. My research interests lie at the intersection of **digital health, non-communicable diseases, and sexual and reproductive health rights (SRHR)**. I am always open to research collaborations—feel free to connect through:

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