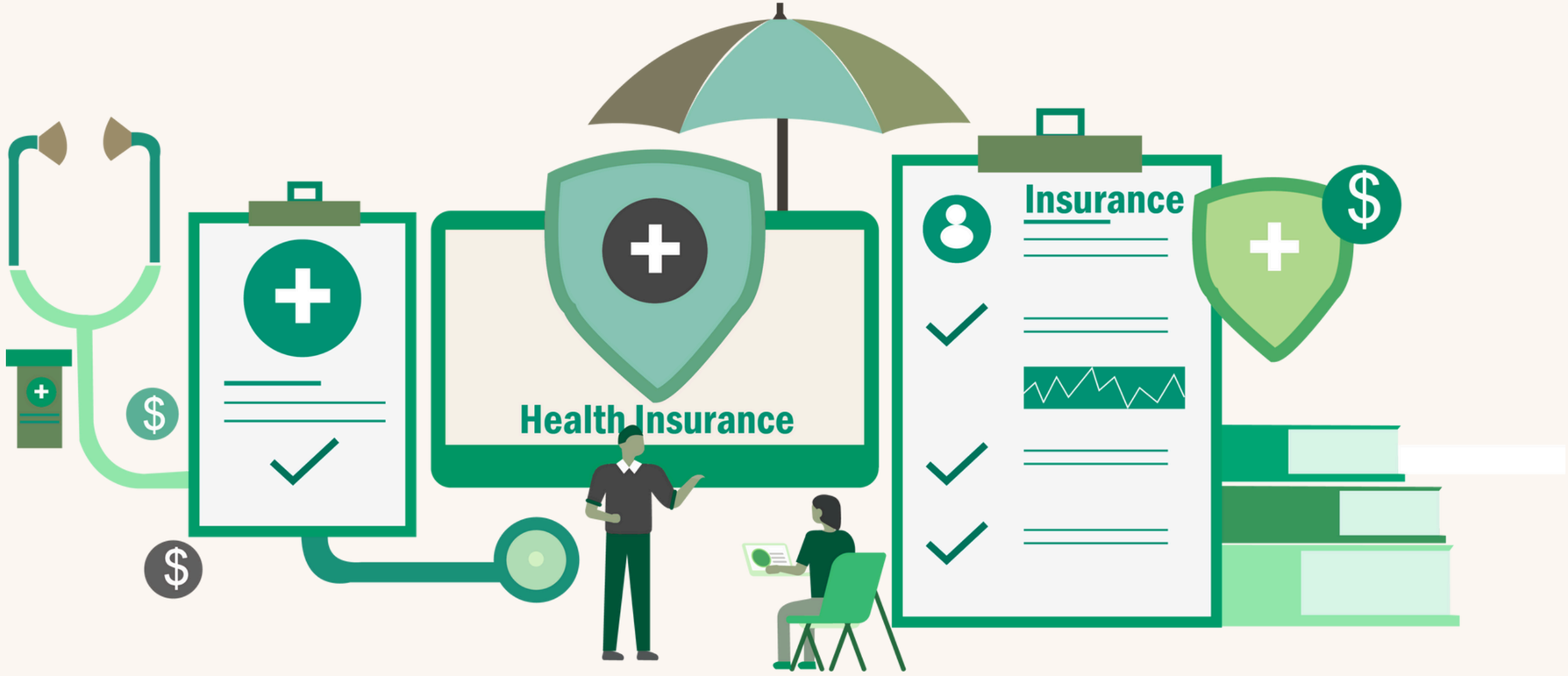
Mandatory Health Insurance and Access to Healthcare Services in Armenia



CS 108 Statistics
Presented by Milena Sargsyan

Research Question:
"How does Armenia's current system fail low-income families, and can a subsidized MHI model improve healthcare access and financial security?"

Global Evidence: MHI reduced disparities in many European and peer countries (e.g., Georgia)

Armenia's Progress:

- 2005: Voluntary insurance introduced
- 2023: Universal Health Insurance concept approved

Persistent gaps: Rural/urban divides, high out-of-pocket costs

Data Collection & Survey Design

Why a Custom Survey?

- No existing data connected insurance status to access barriers
- Needed real stories + hard numbers from Armenians

Առողջության պարտադիր ապահովագրությունն ու առողջապահական ծառայությունների հասանելիությունը Հայաստանում / Mandatory Health Insurance and Access to Healthcare Services in Armenia

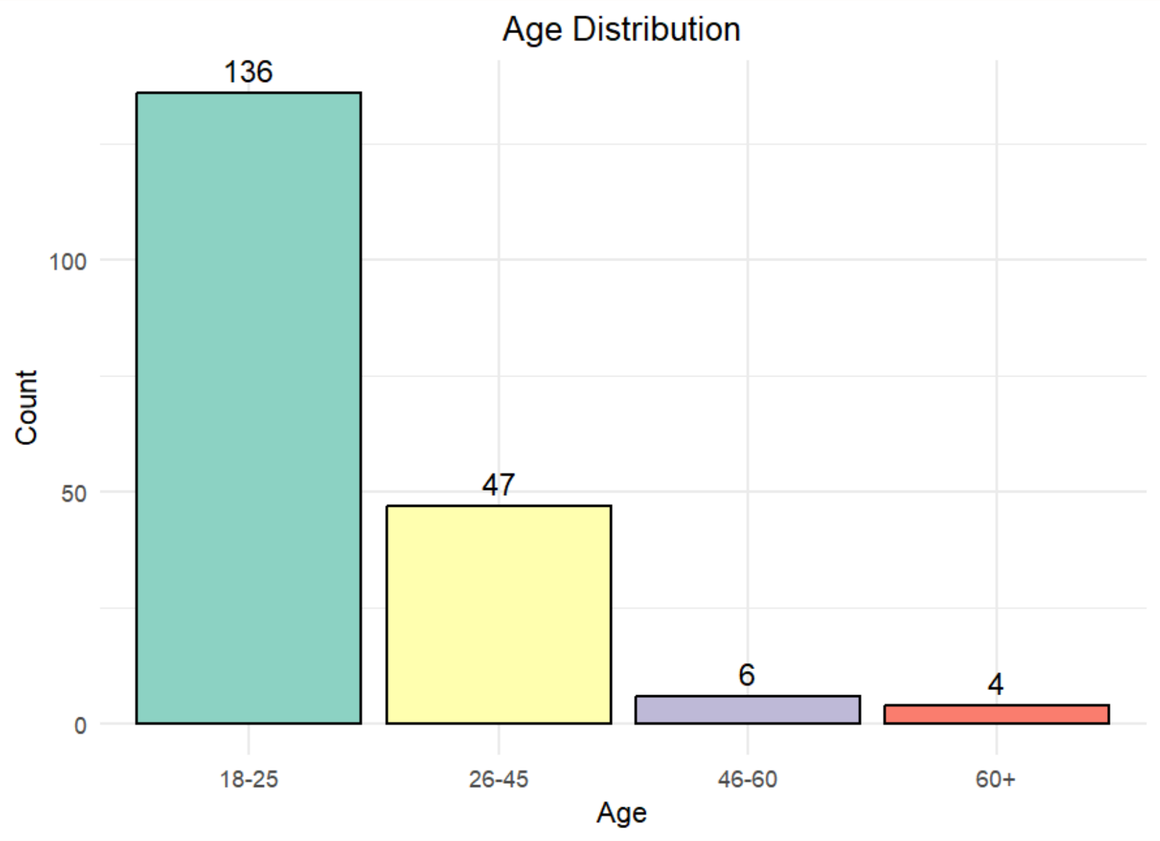
Հարցաթերթիկի նպատակն է՝ հասկանալ ՀՀ քաղաքացիների դիրքորոշումը առողջության պարտադիր ապահովագրության վերաբերյալ և բացահայտել առողջապահական ծառայություններին առնչվող օրինաչափությունները:

Առողջության պարտադիր ապահովագրության շրջանակներում քաղաքացիները վճարում են պարբերական ապահովագրավճարներ, որպեսզի անհրաժեշտության դեպքում կարողանան անվճար օգտվել մի շարք առողջապահական ծառայություններից: Առողջության ապահովագրության այս տեսակը միտված է ապահովել հավասար և հասանելի բժշկական ծառայություններ բնակչության բոլոր շերտերի համար, ինչպես նաև նվազեցնել քաղաքացիների անձնական ծախսերը:

Key Column Names	Type	Description/Units
Age	Categorical (Age groups)	• 18-25 • 26-45 • 46-60 • 60+
ResidenceType	Binary	Urban/Rural
MonthlyIncome	Categorical (Ranges)	• < 100K AMD • 100 - 200K AMD • 200 - 300K AMD • 300 - 400K AMD • > 400K AMD • Currently Not Working
DelayedCare	Binary	Yes - Postponed medical care No - Did not postpone
HasInsurance	Binary	Yes/No
NoInsuranceReason	Categorical (Checkbox)	• High costs • Poor quality of care • Prefer to pay out of pocket when needed • Not familiar with options • Other (text entry)
SupportEssentials	Binary	Will support - when the insurance covers essential services Will not support

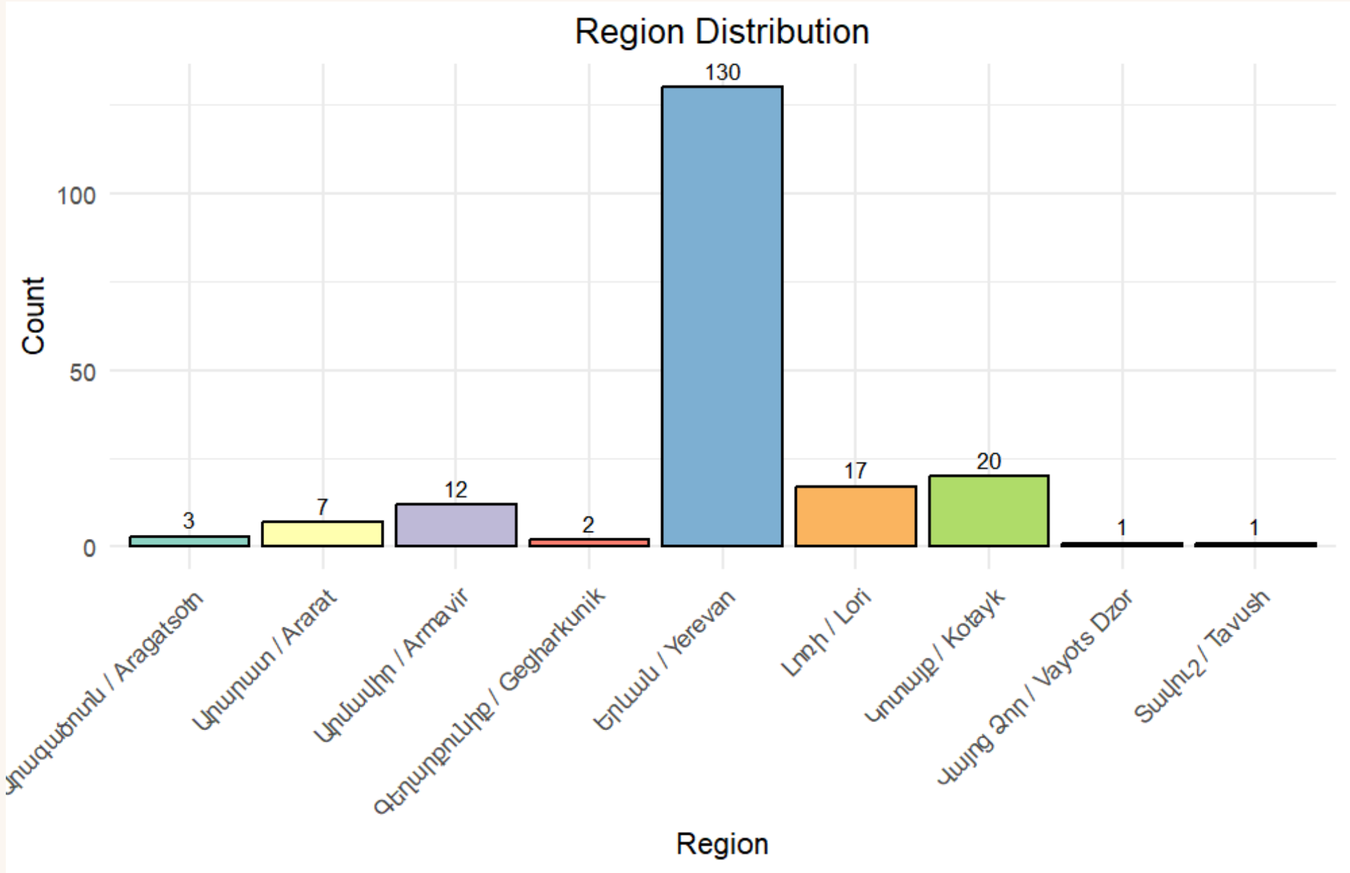
Key Patterns from the data

- Young adults (18–25) dominated responses, reflecting Armenia's digitally-engaged population but potentially underrepresenting elder care challenges.



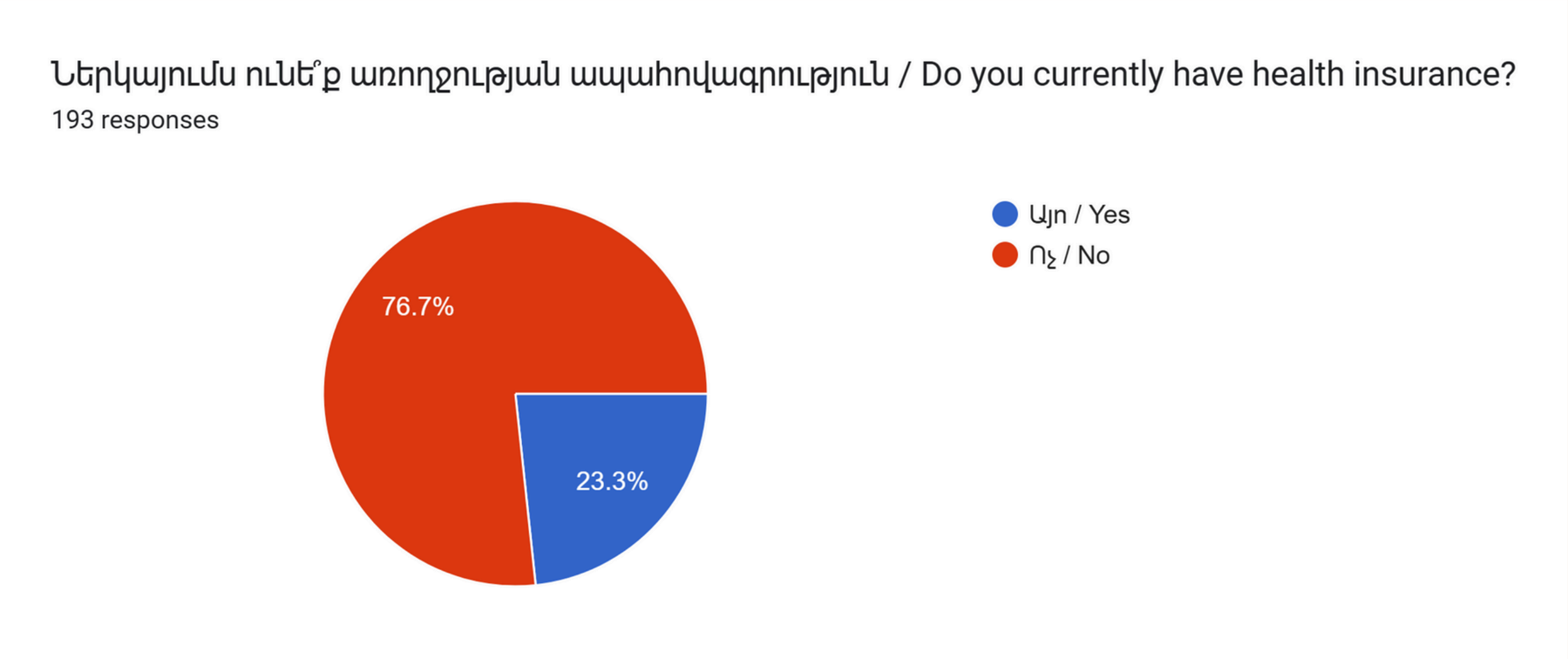
Key Patterns from the data

- While Yerevan predominates, substantial participation from other regions ensures diverse perspectives.



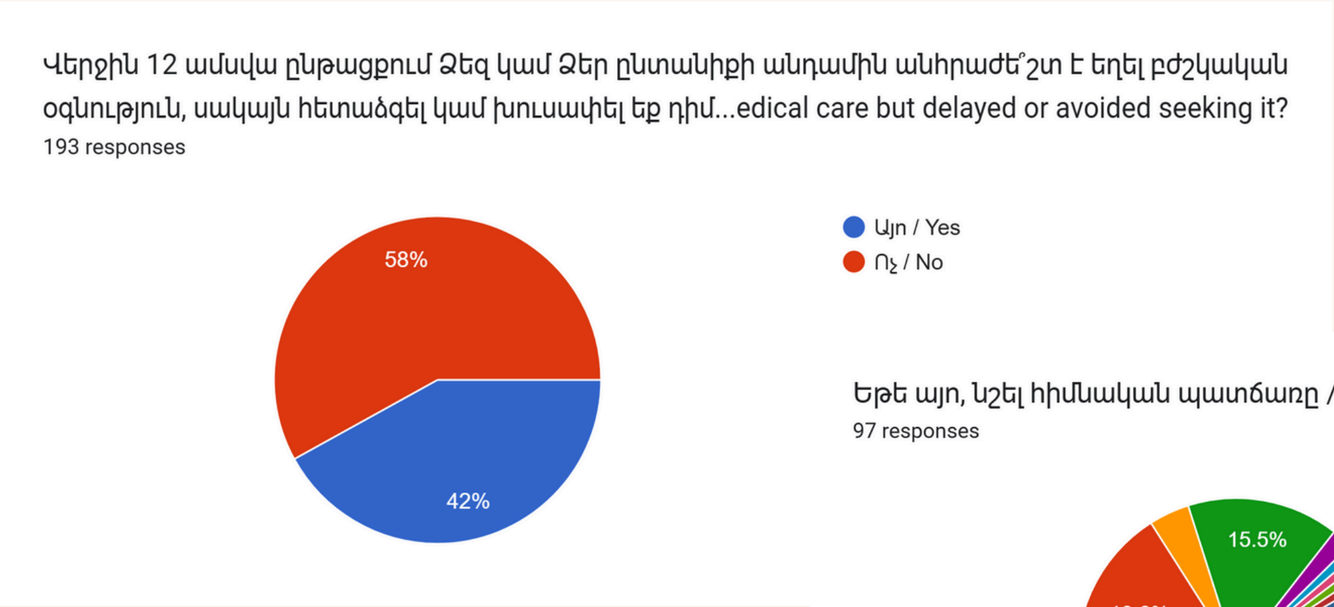
Key Patterns from the data

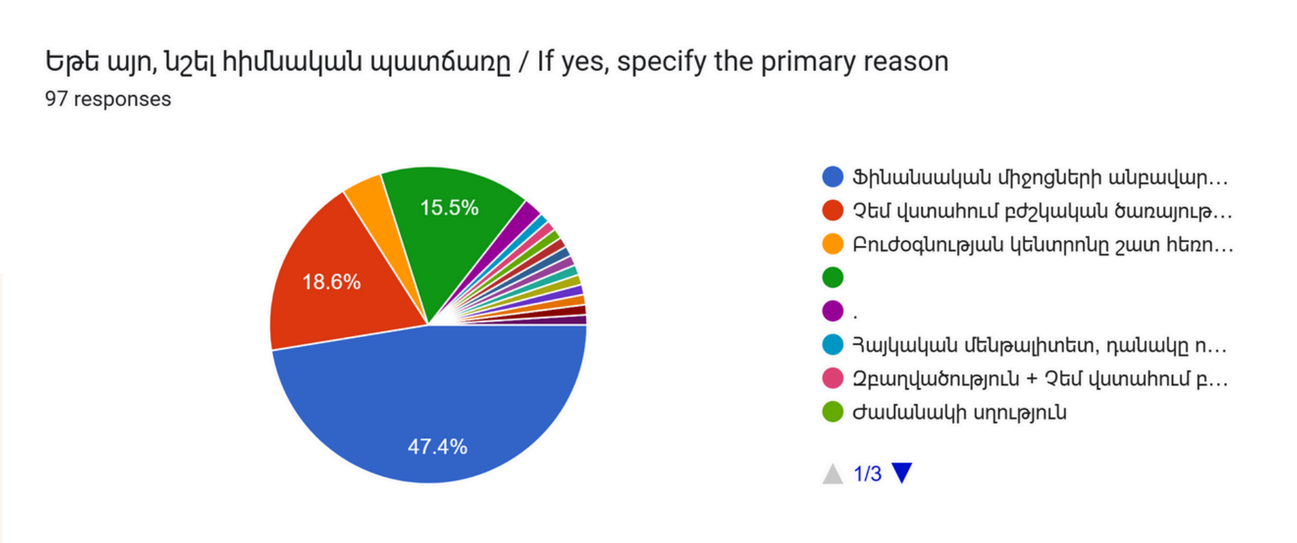
- 23.3% insured vs. 76.7% uninsured
- Armenia's current healthcare model leaves most vulnerable to out-of-pocket expenses, increasing impoverishment risk



Key Patterns from the data

- 42% delayed medical treatment
- Top reason: Lack of finances (47.4%)
- Worsened health outcomes => even more expensive treatments later.





Methods and Results

Rural vs. Urban Care Delays
Test: Two-Proportion Z-Test

Hypothesis:

H_0: No difference in delayed care

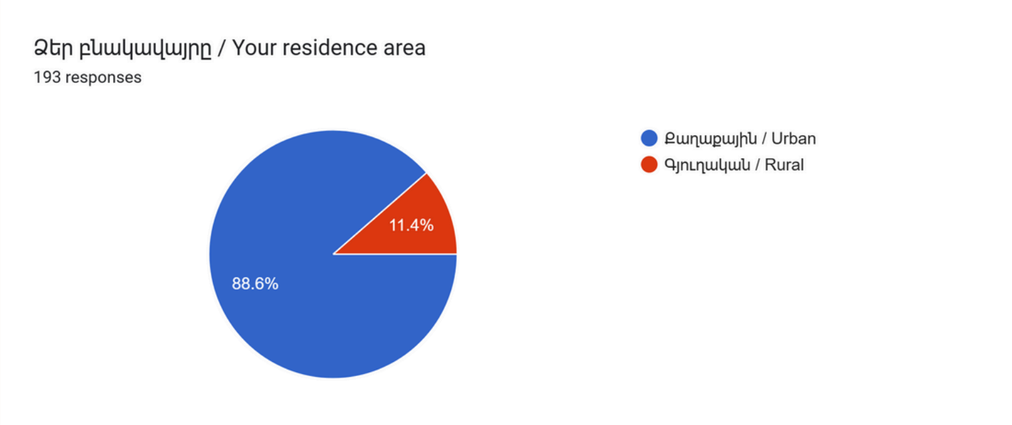
H_1: Rural delays > Urban

Key Insight:

Rural residents face systemic barriers beyond insurance (distance, fewer clinics)

Result:

- ✅ Supported H_1
- Rural: 68% delayed vs. Urban: 38%
- $p = 0.008$ | $Z = -2.65$
- CI: [–52.9%, –6.2%]



Methods and Results

Insurance ≠ Lower Spending

Test: Chi-Square Independence

Hypothesis:

H_0: No spending difference by insurance

H_1: Insured spend less

Result:

❌ Failed to reject H_0

- $p = 0.37 \mid \chi^2 = 4.29$
- Both groups cluster in <100K AMD tier

Key Insight:

Insurance may not reduce costs if coverage is inadequate or care is avoided

	100.000-200.000 դրամ / 100.000-200.000 AMD
Այո / Yes	15
Ոչ / No	31

	100.000 դրամից պակաս / Less than 100,000 AMD
Այո / Yes	27
Ոչ / No	97

	200.000-300.000 դրամ / 200.000-300.000 AMD
Այո / Yes	2
Ոչ / No	9

	300.000-400.000 դրամ / 300.000-400.000 AMD
Այո / Yes	0
Ոչ / No	4

	400.000 դրամից ավելի / More than 400.000 AMD
Այո / Yes	1
Ոչ / No	7

Methods and Results

Why People Lack Insurance
Test: One-Sample Proportion

Hypothesis:

- H_0: ⩽50% unaware
- H_1: >50% unaware

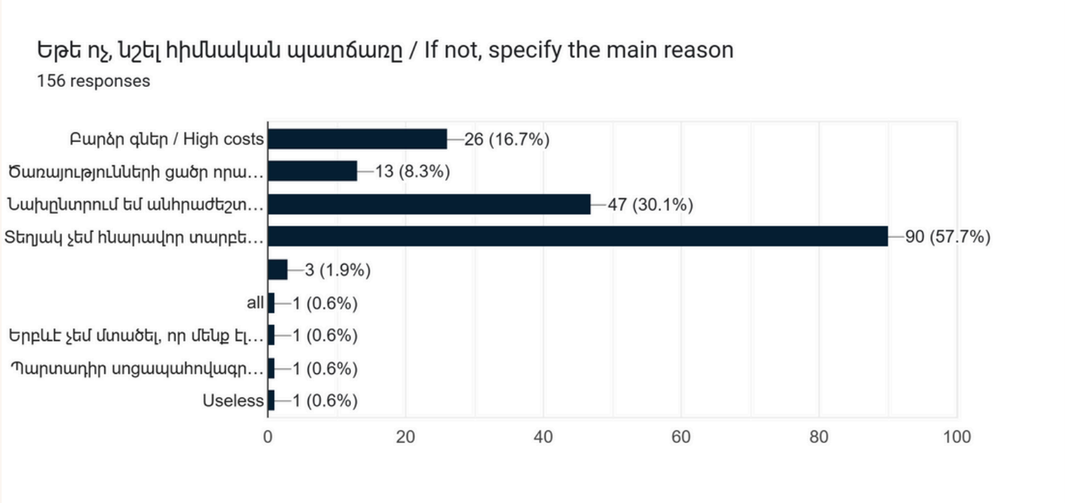
Result:

❌ Failed to reject H_0

- 49% cited unawareness ($p = 0.56$)
- Top other reasons: Cost, Trust, etc.

Key Insight:

Awareness campaigns alone won't solve enrollment – address affordability & trust



Methods and Results

Age Doesn't Predict Support
Test: Chi-Square Independence

Hypothesis:

- H_0: Support independent of age
- H_1: Older > Support

Result:

❌ Failed to reject H_0

- $p = 0.758 \mid \chi^2 = 1.179$
- 90%+ support across all ages

Key Insight:

Rare consensus! MHI has cross-generational backing but needs quality guarantees

	Կաջակցեմ	Չեմ աջակցի
18-25	124	12
26-45	44	3
46-60	6	0
60+	4	0

40%

Filled in the open-ended questions

Many people shared their personal life stories, when they experienced financial difficulties because of medical treatment, while others suggested crucial changes they would like to see in Armenia's healthcare system

Beyond statistics -> Real-life stories

01.

"We paid for my mother's cancer treatment through loans and by pooling our entire family's salaries"

02.

"I've delayed critical MRI scans for years because I simply can't afford them"

03.

"Even with insurance, most treatments aren't covered when you actually need them"

Respondent-Proposed Reforms

01.

"Eliminate corruption and ensure equal access for all"

02.

"Professional, ethical, conscientious doctors and better healthcare infrastructure in rural areas"

03.

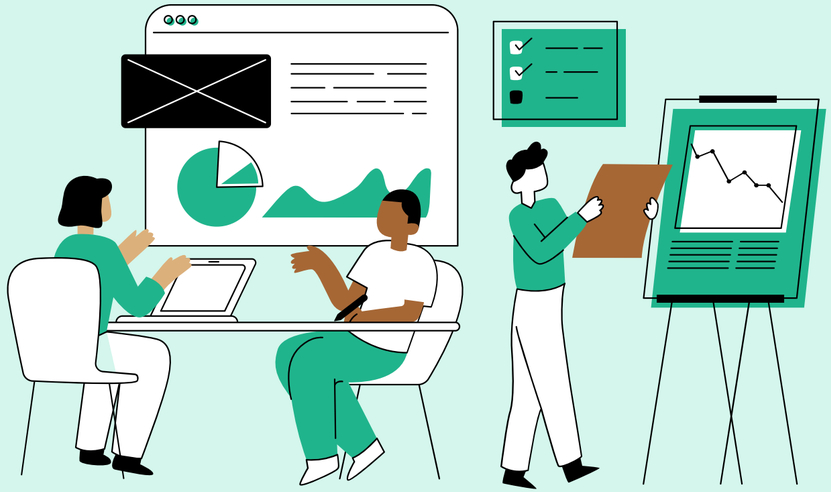
"Mandatory insurance that actually covers treatments"

Proposed recommendations

01. **Implement MHI with safety measures:** Income-based premiums, explicit coverage of diagnostics and chronic care.

02. **Launch rural healthcare initiatives:** Mobile clinics, mandatory doctor rotations, and telemedicine to bridge urban-rural gaps.

03. **Rebuild trust:** Anti-corruption measures in insurance administration and patient feedback systems.



Together, We Can Heal Armenia's Healthcare System

Armenia's healthcare system disproportionately burdens low-income and rural families, forcing many into medical impoverishment – a crisis that mandatory health insurance (MHI) alone cannot solve without addressing systemic corruption, geographic inequities, and distrust in care quality.

Thank you very much!

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