

Training Users to Recognize Persuasion Techniques in Scam Calls

\$692M

Lost to scam calls in the US in 2021

\$1,200

Median loss per victim

\$586M

COVID-19 related scam losses, 2020–21

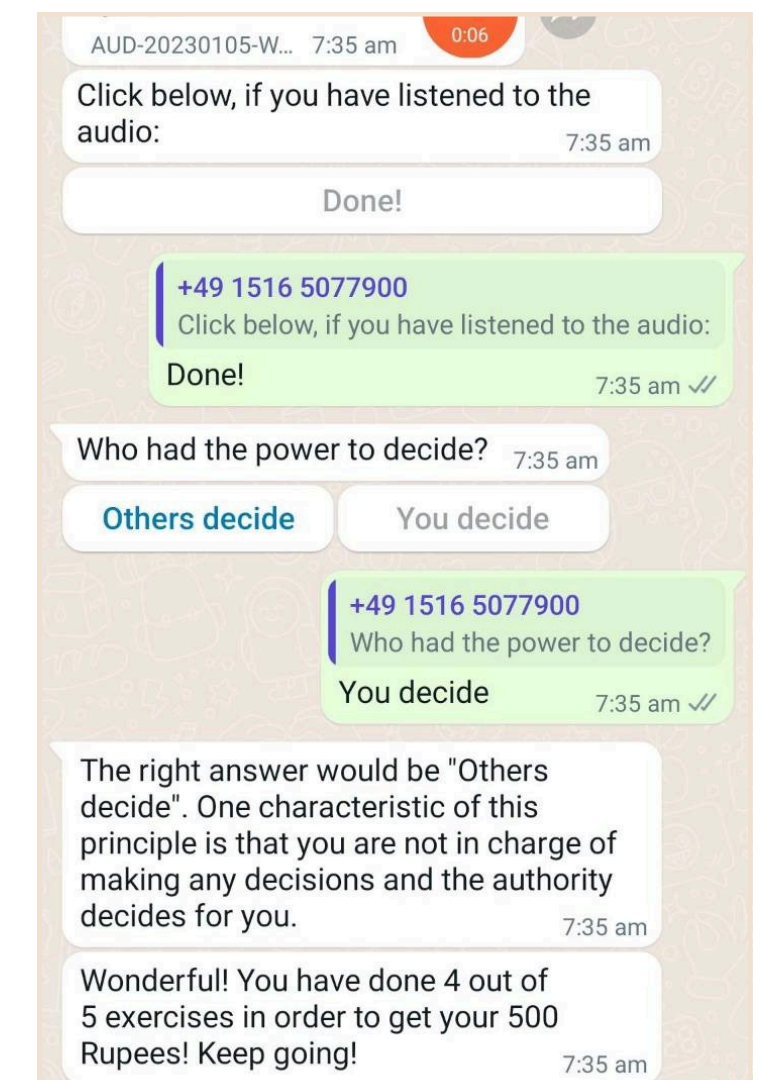
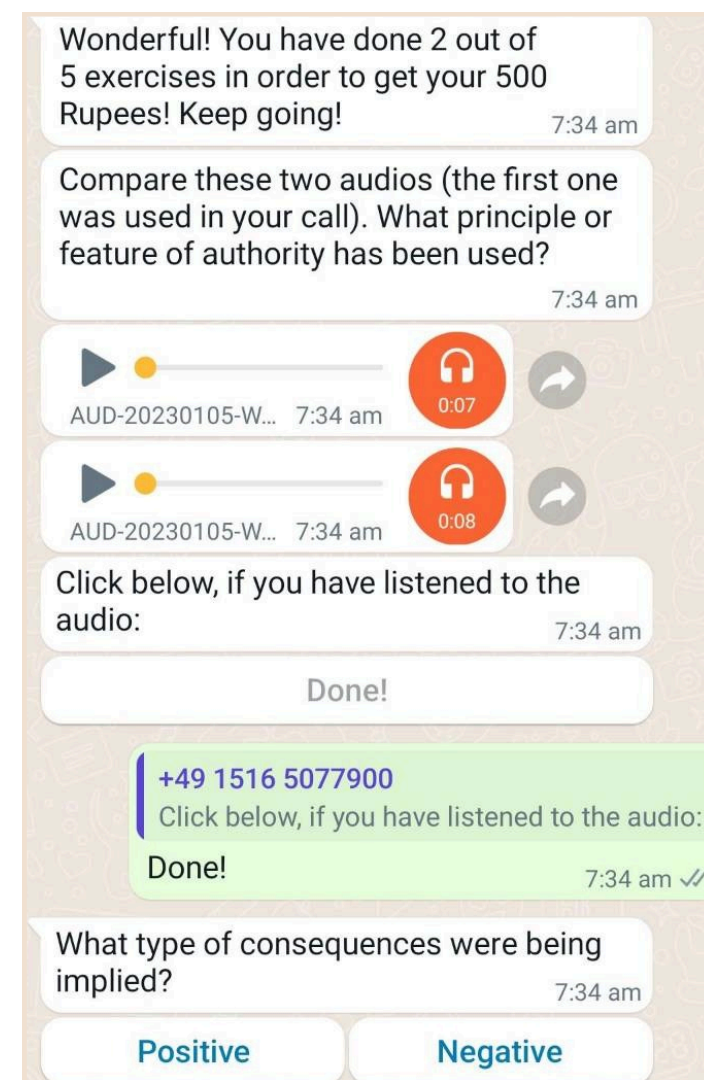
The research gap

Government advisories and bank warnings raise general awareness but don't explain how scams actually work psychologically. Prior training studies show effects that decay within a week and don't transfer when scammers change their narrative. All prior work was also done on Western, educated populations, leaving the Global South unstudied.

A WhatsApp Chatbot That Teaches How Scams Work

Rather than listing warning signs, we used analogical learning, which involves presenting pairs of scam call recordings and asking users to identify the shared persuasion tactic. The goal: build transferable pattern recognition, not just scam-specific memory. The chatbot ran in Roman Urdu on WhatsApp, requiring no app install.

01	Intro	Distinguish authority from social proof
02	Titles	Recognise authoritative roles & positions
03	Fear	Spot negative vs. positive consequences
04	Control	Identify who holds agency in the call
05	Urgency	Detect artificially imposed time pressure



Between-Subjects Study · 100 University Students of

01 | **Registration** | 244 signed up; 100 attended (41 female, 59 male) across Computer Science, Engineering, Humanities, Business, Law

02 | **Training** | Live Zoom session, breakout rooms of 10. Both groups heard a sample vishing call first, then diverged to respective trainings

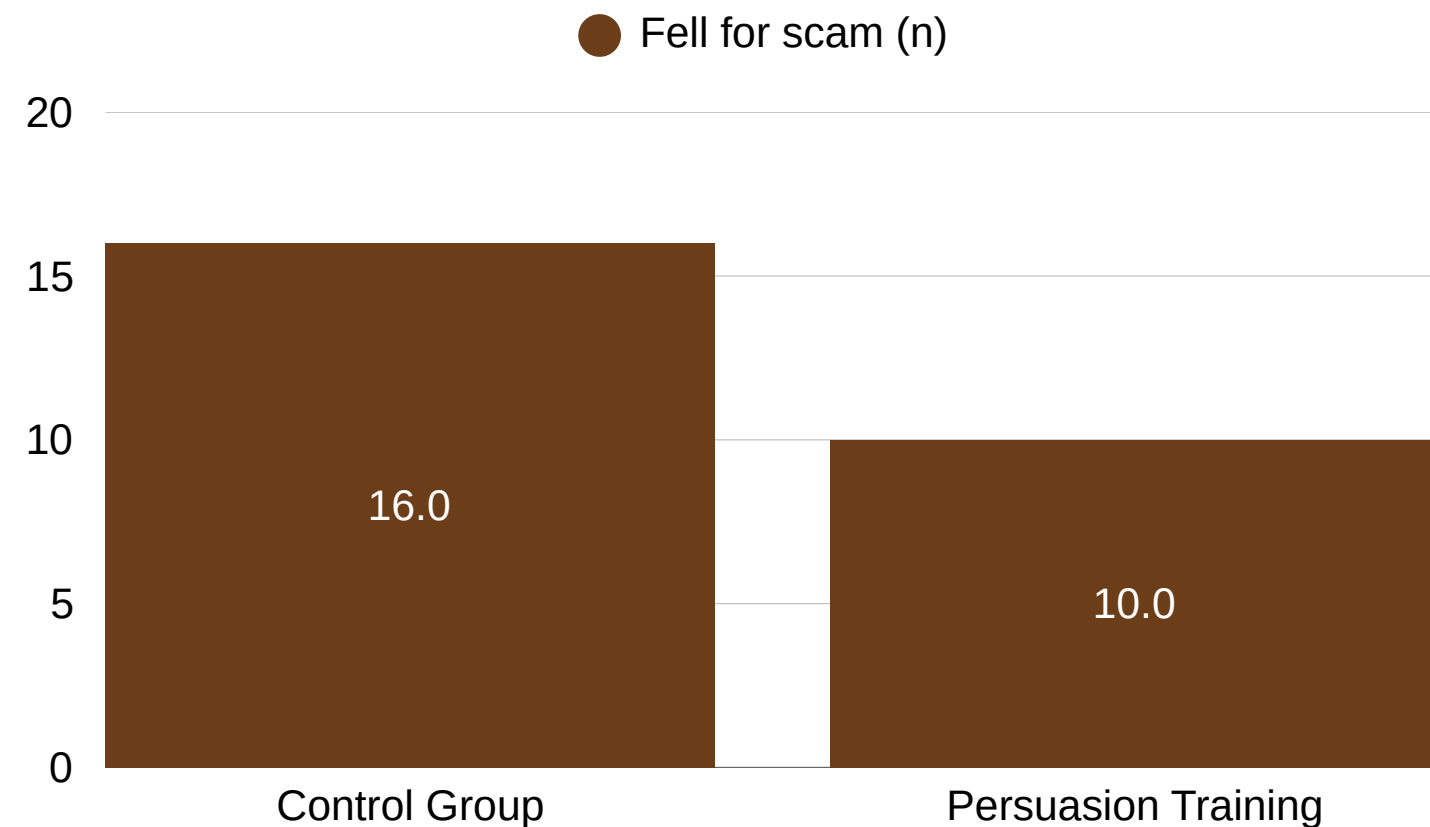
03 | **Simulated call** | 8 days later, researchers called all participants posing as university IT staff claiming fee records were lost and asking for father's name and a callback number to verify identity

04 | **Debrief** | Participants immediately told it was a study. 18 volunteered for exit semi-structured interviews

Treatment Group n=46 · WhatsApp chatbot in Roman Urdu · Focus: authority (title, fear, control, urgency)

Control Group n=54 · General awareness slides · No persuasion principle training

Training Helped — But the Qualitative Findings Tell the Deeper Story



55.2%

Control group fell for the scam

47.6%

Persuasion training group fell for the scam

$p = .493$

Not significant, n=356 needed for adequate power

Why people detected the call

Recalled the chatbot script — it matched the call exactly

University always uses email, not phone calls

Caller refused to allow an in-person visit

Recognised urgency and fear as persuasion tactics

Why people fell for it

Landline number resembled the official university line

Narrative was realistic — fee issues were real at the time

Didn't expect a scam to come from a university context

Actors were well-trained and responded convincingly

A Promising Direction for Scam Call Prevention

01 Principle-based training works

Participants who recalled persuasion principles detected the scam even when the narrative was different from training. The knowledge transferred.

02 Voice recordings are essential

Hearing scam calls was consistently cited as more effective than reading about them. Audio makes the threat tangible in a way text can't.

03 WhatsApp is the right delivery channel

No app install, native language (Roman Urdu), conversational format. This works for low-literacy and low-income populations that other solutions miss.

04 Real-world impact potential

Participants noted banks and governments could deploy this at scale. One said: "I can already see the government wanting to send this to everyone."
