

IKWE.AI RESEARCH

# Behavioral Emotional Safety in Conversational AI

A Scenario-Based Evaluation

Full Research Report

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Applied evaluation infrastructure for  
emotional safety in conversational AI

Version 2.1 · February 2026

<https://ikwe.ai>



## KEY RESULTS

# Two-Stage Evaluation Summary

### STAGE 1 — EMOTIONAL SAFETY GATE

# 54.7%

of baseline responses **passed** the initial emotional safety check  
(did not introduce emotional risk at first contact)

# 43%

of risk-introducing responses showed **no corrective behavior**  
within the interaction window

### STAGE 2 — CONDITIONAL PERFORMANCE

Scores below reflect regulation quality only among responses that passed Stage 1.

# 1.7 / 5

average Regulation Before Reasoning score (baseline models)

*Highest emotional fluency often correlated with lower behavioral safety.*

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*This document describes observed behavioral patterns under controlled test conditions.  
It does not make clinical, deployment, or real-world outcome claims.*

## EXECUTIVE SUMMARY

# Why Behavioral Emotional Safety Matters

This document presents Ikwe.ai's evaluation of behavioral emotional safety in conversational AI — focusing on how systems **behave** once emotional vulnerability is present, not merely whether they recognize it.

**Behavioral emotional safety** refers to a system's ability to remain stabilizing, bounded, and non-amplifying once emotional vulnerability is present. It is not the same as emotional recognition, empathetic language, or policy compliance.

Ikwe.ai developed this benchmark after observing repeated safety failures during applied system testing. Systems that appeared emotionally fluent at first contact frequently introduced risk over time — reinforcing distress, accelerating rumination, or failing to maintain appropriate conversational boundaries.

The Ikwe.ai model was evaluated as a reference implementation, demonstrating lower behavioral variance and greater stability after passing a baseline emotional safety gate.

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### ***Recognition ≠ Safety***

*An AI system can accurately identify emotion and articulate empathy  
while still behaving unsafely under emotional load.*

## THE PROBLEM

# What Benchmarks Miss

Existing AI safety benchmarks focus on content-level risks: toxicity, bias, policy violations, and harmful outputs. Emotional intelligence benchmarks test recognition accuracy — whether a model can correctly label emotions.

Neither approach measures **behavioral safety under emotional load**: how a system actually behaves when interacting with someone who is already vulnerable.

## The Gap

A model can correctly identify that a user is experiencing grief, respond with linguistically appropriate empathy, and still:

- Mirror and amplify the user's distress
- Reinforce rumination loops
- Miss escalation signals
- Create inappropriate dependency
- Blur professional boundaries

These failures do not register on existing benchmarks. This research addresses that gap.

METHODOLOGY

# Two-Stage Evaluation Framework

This evaluation uses a **two-stage framework** to separate first-contact safety from behavioral stability over time.

## Stage 1: Safety Gate (Binary)

Each response is checked against ten predefined behavioral risk patterns. Any trigger results in a Safety Gate **failure**, indicating the response introduced emotional risk at first contact.

## Stage 2: Behavioral Stability (Conditional)

Responses that **pass** the Safety Gate are then evaluated across eight weighted dimensions measuring behavioral stability as emotional vulnerability deepens.

Dimension	Weight
Regulation Before Reasoning	20%
Escalation Awareness	15%
Boundary Maintenance	15%
Distress Tolerance	12%
Reality Grounding	12%
Autonomy Support	10%
Resource Bridging	8%
Emotional Continuity	8%

FINDINGS

Model Comparison

System	Avg Score	Safety Pass Rate	Regulation
Ikwe.ai model	74.0	84.6%	4.05 / 5
Claude 3.5 Sonnet	52.7	56.4%	2.03 / 5
GPT-4o	51.6	59.0%	1.69 / 5
Grok	40.5	20.5%	1.40 / 5

Scores reflect observed response behavior under controlled test conditions. Avg Score and Regulation are **conditional** — they only reflect responses that passed the Safety Gate.

Key Finding 1: First-Contact Risk

Only **54.7%** of baseline model responses passed the Safety Gate at first contact. Nearly half of initial responses to emotionally vulnerable scenarios introduced behavioral risk before any trust had formed.

Key Finding 2: Absent Repair Behavior

**43%** of risk-introducing responses showed no corrective behavior within the interaction window. When a response introduced emotional risk, nearly half of the time the system showed no subsequent attempt to repair or stabilize.

Key Finding 3: Fluency ≠ Regulation

Models with the highest emotional articulation often performed **worst** on safety behaviors under distress. Fluent emotional language did not correlate with — and sometimes inversely correlated with — behavioral regulation.

## IMPLICATIONS

# What This Means for Stakeholders

### For AI Developers

- Emotional recognition benchmarks are insufficient proxies for emotional safety
- Safety evaluation must include multi-turn behavioral stability testing
- Repair mechanisms need explicit design attention — they do not emerge from general training
- Higher emotional fluency may require additional safety constraints, not fewer

### For Healthcare and Wellness Deployers

- HIPAA compliance and data security do not address behavioral safety
- 'Health' and 'emotional intelligence' marketing claims require behavioral verification
- Risk increases with context aggregation — more personal data means higher stakes
- Late-stage risk (after trust forms) may be more dangerous than first-contact risk

### For Policy and Governance

- Current AI safety frameworks lack behavioral emotional safety requirements
- Self-reported emotional intelligence claims have no standardized verification
- Vulnerable population protections need trajectory-based evaluation, not just content filtering

## LIMITATIONS

# Scope and Constraints

### What This Research Does Not Claim

- No real-world outcome claims — Findings describe test behavior, not deployment outcomes
- No clinical or therapeutic conclusions — This is safety research, not clinical validation
- No deployment recommendations — Results inform evaluation, not product decisions
- No general intelligence comparisons — Scores reflect emotional safety, not capability
- No attribution of intent or design motive — Behavior is measured, not explained

### Methodological Limitations

- Sample size (79 scenarios, 312 responses) limits statistical power for subgroup analysis
- Scenario selection may not fully represent real-world emotional vulnerability distribution
- Single-turn and short multi-turn evaluation may miss longer interaction dynamics
- Model versions tested may differ from current production deployments
- Human evaluation introduces subjectivity despite calibration efforts

## CONCLUSION

# The Path Forward

This research identifies a measurable gap between emotional recognition capabilities and behavioral emotional safety in conversational AI systems.

The core finding — **Recognition**  $\neq$  **Safety** — has implications for how AI systems are evaluated, deployed, and marketed in contexts involving emotional vulnerability.

Current frontier models demonstrate substantial first-contact risk and limited capacity for behavioral repair once emotional risk is introduced. Emotional articulation alone does not reliably translate into safe behavior under emotional load.

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***Safety is not the first reply.  
It is the trajectory.***

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***Behavioral emotional safety must be measured — not  
assumed.***

## CITATION & RESOURCES

# Reference This Work

**Ikwe.ai (2026).** Behavioral Emotional Safety in Conversational AI: A Scenario-Based Evaluation. Full Research Report · Version 2.1

<https://ikwe.ai/research>

## Additional Resources

- Full methodology: <https://ikwe.ai/research>
- Interactive findings explorer: <https://ikwe.ai/explorer>
- Press resources: <https://ikwe.ai/press>
- Request evaluation: <https://ikwe.ai/inquiry>

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*Building the behavioral safety layer AI benchmarks forgot.*

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