

Review Article

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Health Insurance Communication During Economic Recession: An AI-Assisted Exploratory Mind Genomics Framework

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ABSTRACT

Health insurance decision-making during periods of personal financial strain and economic recession may be influenced not only by economic considerations, but also by emotional stress, cognitive overload, uncertainty, and perceived vulnerability. Individuals facing financial instability often experience fear of unexpected medical expenses, reduced cognitive bandwidth, and difficulty navigating complex insurance systems, potentially affecting healthcare-access behavior and insurance-related choices. This paper presents an AI-assisted exploratory Mind Genomics backgrounder examining possible patterns of insurance-related interpretation under recession-related conditions. Rather than using human participants or clinical datasets, the framework used AI-assisted synthetic vignette modeling and exploratory segmentation logic to generate hypothetical communication-oriented interpretive structures relevant to healthcare affordability and insurance decision-making. Microsoft CoPilot AI generated sixteen insurance-related communication elements involving affordability, emotional security, healthcare navigation, financial risk, and recession-related uncertainty. Exploratory AI-simulated coefficient structures and k-means clustering logic were subsequently used to generate three synthetic interpretive mindsets: Security Seekers, System Navigators, and Cost-Focused Realists. The exploratory framework suggested that insurance-related communication themes may resonate differently depending on emotional priorities, perceived financial vulnerability, cognitive burden, and informational needs. Although exploratory and non-empirical in nature, the present backgrounder illustrates how AI-assisted Mind Genomics modeling may help organize communication-oriented hypotheses relevant to healthcare affordability, insurance-related stress, healthcare-access behavior, and recession-era public-health communication.

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Abbreviations

AI: Artificial Intelligence

OLS: Ordinary Least Squares

Introduction

Health insurance decision-making during periods of economic instability is influenced not only by financial considerations but also by psychological stress, cognitive burden, uncertainty, and perceived vulnerability. Research in behavioral economics and cognitive science suggests that financial scarcity may narrow attention, impair long-term planning, and reduce cognitive bandwidth during complex healthcare-related decisions [1-3]. Individuals experiencing financial strain may therefore prioritize immediate affordability over broader long-term protection when evaluating health insurance options [4,5]. These dynamics suggest that insurance-related decisions during recession are shaped not only by economic calculation but also by emotional stress, fear of financial instability, and reduced decision-making capacity under pressure.

The structure of the health insurance system may further intensify these pressures. Differences in deductibles, premiums, provider networks, and out-of-pocket limits can create substantial informational complexity for individuals attempting to compare plans and estimate future healthcare costs [6,7]. Previous public health and healthcare policy reports have additionally suggested that financially vulnerable individuals may delay medical care, avoid healthcare utilization, or experience heightened anxiety regarding healthcare affordability during economically unstable periods [8-10]. Such patterns are clinically relevant because disruptions in healthcare access and delayed care-seeking behavior may contribute to broader healthcare-access and public-health challenges during periods of economic stress.

Stress-related cognitive processing may also influence how insurance-related information is interpreted and acted upon. Experimental research has suggested that chronic financial stress may increase attention toward threat-related outcomes while simultaneously reducing the ability to process nuanced or complex information efficiently [3]. Under stressful conditions, individuals may postpone decisions, avoid changing plans, or remain with suboptimal coverage because uncertainty itself becomes psychologically difficult to manage [11]. Comparison-friction

research has similarly suggested that excessive informational complexity may impair healthcare-related decision-making even when technically relevant information is available [12]. Together, these findings underscore the importance of healthcare communication strategies that reduce cognitive overload, improve clarity, and acknowledge the realities of financial stress during insurance decision-making.

Cultural meaning, prior healthcare experiences, and perceptions of institutional trust may further shape how insurance-related communication is interpreted. For some individuals, insurance may represent protection, preparedness, and stability, whereas for others it may evoke perceptions of bureaucracy, denied claims, financial pressure, or mistrust arising from previous healthcare experiences [10]. Communication approaches that recognize these differing interpretations may therefore help support more effective public-health messaging and healthcare engagement during financially unstable conditions.

Previous exploratory work examining healthcare insurance experiences during periods of financial pressure used AI-assisted simulations, narrative exploration, and communication-oriented conceptual modeling approaches [13]. That work used generative AI to simulate healthcare-insurance-related situations and focused primarily on descriptive representations of emotionally stressful insurance experiences and public-facing communication during financial instability. The present backgrounder extends this broader exploratory direction using a more structured Mind Genomics-inspired framework designed to examine how different insurance-related messages may potentially resonate across psychologically distinct interpretive groups during periods of economic fear and recession-related uncertainty.

Importantly, the present work should be understood as an AI-assisted exploratory backgrounder rather than a conventional human-subject epidemiologic investigation. No human participants, patient interviews, surveys, or clinical datasets were used. Instead, the framework uses synthetic vignette modeling, AI-assisted element generation, and Mind Genomics-inspired segmentation logic to explore possible interpretive patterns related to affordability, emotional security, informational clarity, and financial survival during recession-related insurance decision-making. The objective is therefore conceptual and hypothesis-generating rather than predictive or population-estimating. By exploring possible interpretive response architectures during recession-related insurance decision-making, the present framework may help support future research on healthcare communication, healthcare-access behavior, and public-health messaging during periods of financial instability.

Method

This work was developed as an AI-assisted exploratory Mind Genomics backgrounder to examine possible patterns of health-insurance interpretation during periods of personal financial stress and recession-related uncertainty. The objective was not to conduct a conventional human-subject epidemiologic investigation, but rather to explore how different insurance-related communication themes might potentially resonate across psychologically distinct interpretive groups under economically stressful conditions.

The framework followed the general organizing logic of Mind Genomics experimental design, which uses systematically varied combinations of communication elements to explore patterns of interpretation and response [14]. No human participants, patient interviews, surveys, medical records, or clinical datasets were

used in this work. Instead, the study used AI-assisted synthetic vignette modeling and exploratory segmentation logic to generate a conceptual backgrounder intended for hypothesis generation and communication-oriented analysis.

The conceptual objectives of the study were first provided to Microsoft CoPilot AI, which was then instructed to generate four thematic question areas, each containing four possible answer elements. This process produced sixteen standalone communication elements representing diverse insurance-related themes including affordability, financial risk, trust, informational clarity, emotional security, healthcare access, and recession-related financial vulnerability. The sixteen elements were organized into four silos of four elements following standard Mind Genomics structure.

Synthetic vignette combinations were then constructed using permuted experimental design logic derived from the Mind Genomics framework [14]. Each synthetic response profile was presented with systematically varied combinations of two to four elements per vignette. The purpose of this structure was not to estimate real-world population behavior, but rather to explore possible interpretive response architectures that may emerge when different insurance-related communication themes interact under simulated recession-related conditions.

The sixteen AI-generated communication elements and their conceptual rationales are presented below. These elements were designed to reflect different dimensions of insurance-related interpretation including cognitive burden, emotional reassurance, affordability concerns, perceived protection, healthcare navigation, and financial survival during recession-related uncertainty.

Table 1: Ai-Generated Communication Elements and Conceptual Rationales used in the Mind Genomics-Inspired Framework

A1 You learn how financial stress affects your ability to compare insurance plans. <i>Rationale: This element reframes confusion as a predictable cognitive effect of scarcity rather than a personal failure. It reduces shame and increases willingness to seek help.</i>
A2 You discover simple ways to estimate your real yearly medical costs. <i>Rationale: This element provides clarity in a domain often clouded by jargon and uncertainty. It empowers people to make decisions based on realistic expectations rather than fear.</i>
A3 You see how choosing a plan with a higher deductible can still protect you from catastrophic bills. <i>Rationale: This element reframes deductibles as part of a broader safety strategy rather than a threat. It helps people understand long term risk protection during recession.</i>
A4 You hear that many people feel overwhelmed by insurance choices during economic downturns. <i>Rationale: This element normalizes confusion and reduces isolation. It reassures people that their struggle is shared and understandable.</i>
B1 You find out how insurers negotiate lower prices than individuals can get on their own. <i>Rationale: This element highlights the hidden value of insurance beyond premiums. It reframes coverage as access to purchasing power rather than just paperwork.</i>
B2 You learn that delaying care during recession often leads to higher long term costs. <i>Rationale: This element connects short term avoidance to long term financial risk. It encourages proactive thinking even under economic strain.</i>

B3 You explore how unexpected medical bills are the leading cause of personal bankruptcy. <i>Rationale: This element underscores the protective role of insurance during financial instability. It increases perceived urgency and relevance.</i>
B4 You discover that many people qualify for subsidies or employer support without realizing it. <i>Rationale: This element reduces perceived financial barriers by revealing hidden assistance. It increases hope and perceived feasibility.</i>
C1 You get tips for choosing a plan that fits unpredictable income. <i>Rationale: This element addresses the instability of recession era finances. It reassures people that insurance can adapt to fluctuating circumstances.</i>
C2 You learn how to check whether your doctors are in network without spending hours searching. <i>Rationale: This element reduces cognitive load by simplifying a notoriously frustrating task. It increases confidence in navigating the system.</i>
C3 You see examples of families who switched plans during recession and saved money. <i>Rationale: This element uses social proof to normalize change. It reduces fear of making the wrong decision.</i>
C4 You hear stories of people who avoided major debt because they kept coverage during hard times. <i>Rationale: This element highlights the protective value of continuity. It reinforces the long term benefits of staying insured.</i>
D1 You learn how to read a benefits summary in under five minutes. <i>Rationale: This element reduces intimidation by offering a simple, fast method. It increases perceived competence and control.</i>
D2 You discover how to compare plans using only three key numbers. <i>Rationale: This element simplifies complex decisions into manageable steps. It reduces overwhelm and increases clarity.</i>
D3 You explore how insurance provides emotional security during uncertain times. <i>Rationale: This element acknowledges the psychological dimension of coverage. It reframes insurance as peace of mind rather than a financial burden.</i>
D4 You hear that understanding your plan now prevents panic later. <i>Rationale: This element connects preparation to emotional stability. It encourages proactive engagement rather than avoidance.</i>

The exploratory framework next generated AI-simulated Ordinary Least Squares (OLS) coefficient structures intended to estimate the relative contribution of individual communication elements to perceived reassurance, relevance, clarity, emotional security, and motivational salience within the AI-assisted model. The coefficients presented in this backgrounder should therefore be interpreted as exploratory AI-simulated outputs rather than empirical measurements derived from human respondents. Positive coefficient constraints were maintained within the exploratory simulation framework in order to preserve emphasis on relative communication resonance rather than suppression-oriented interpretation.

Table 2 presents the exploratory AI-simulated OLS coefficient structures generated within the AI-assisted simulation environment. These values were used primarily to identify broad interpretive tendencies and communication-oriented response patterns rather than to produce population-level statistical estimates.

Table 2: Exploratory AI-simulated OLS (Ordinary Least Squares) Coefficient Structures for the Sixteen Communication Elements

Element	Coefficient	Element	Coefficient
A1 Financial stress affects comparison ability	22	C1 Plans for unpredictable income	16
A2 Estimate real yearly medical costs	18	C2 Check in network doctors easily	14
A3 High deductible plans still protect	15	C3 Families who switched and saved	11
A4 Overwhelm during downturns is common	12	C4 Coverage prevents major debt	20
B1 Insurers negotiate lower prices	25	D1 Read benefits summary in five minutes	17
B2 Delaying care increases long term costs	21	D2 Compare plans using three numbers	23
B3 Medical bills drive bankruptcy	27	D3 Insurance provides emotional security	13
B4 Many qualify for subsidies unknowingly	19	D4 Understanding now prevents panic later	24

Exploratory Mindset Segmentation Using AI-Simulated Coefficient Patterns

The exploratory AI-simulated coefficient structures were subsequently examined using k-means clustering logic in order to identify possible interpretive response patterns within the synthetic framework. The resulting mindset structures were interpreted conceptually rather than demographically, with emphasis on communication preferences, perceived financial vulnerability, emotional reassurance, clarity, and healthcare-navigation priorities under recession-related stress. These exploratory mindsets should not be interpreted as validated population segments or clinical categories, but rather as AI-generated communication-oriented interpretive architectures within the present exploratory framework.

Table 3 presents the three exploratory AI-generated mindsets and the associated interpretive themes identified within the simulation framework.

Table 3: Exploratory AI-generated Insurance Communication Mindsets and Interpretive Themes

MINDSET 1: THE SECURITY SEEKERS. Core theme: “I need protection, reassurance, and emotional safety.” Security Seekers respond strongly to messages about catastrophic protection, emotional stability, and the hidden financial dangers of going uninsured. They are motivated by fear of medical bankruptcy and the desire to shield their families from unpredictable crises, especially during recession. Their private thoughts often include worries they rarely voice: “One accident could ruin us,” or “I can’t afford to gamble with my health right now.” This mind set demonstrates that insurance is experienced as emotional security rather than a financial product.
MINDSET 2: THE SYSTEM NAVIGATORS. Core theme: “Help me understand the system quickly and clearly.” System Navigators respond most strongly to clarity, simplification, and actionable steps that reduce cognitive load. They want to know how to compare plans, how to read benefits summaries, and how to avoid hidden pitfalls without spending hours researching. Their private thoughts often revolve around frustration: “Why is this so complicated?” or “Just tell me what matters so I don’t make a mistake.” This mind set highlights the need for communication that reduces complexity and increases perceived competence.
MINDSET 3: THE COST FOCUSED REALISTS. Core theme: “Show me how to survive financially during recession.” Cost Focused Realists respond strongly to messages about subsidies, budgeting, and strategies for managing unpredictable income. They view insurance through the lens of financial survival and want reassurance that coverage will not push them deeper into debt. Their private thoughts often include quiet fear: “I’m choosing between rent and premiums,” or “If I lose my job, what happens to my coverage?” This mind set underscores the importance of affordability, flexibility, and dignity preserving communication.

AI-Generated Illustrative Communication Scenarios for the Exploratory Mindsets

The synthetic mindset structures were subsequently used to generate illustrative communication-oriented scenarios and possible messaging approaches relevant to healthcare affordability, recession-related stress, and insurance decision-making. These exploratory communication examples were intended to examine how different messaging approaches might potentially align with distinct interpretive priorities under economically stressful conditions.

Table 4 presents AI-generated illustrative communication strategies corresponding to the three exploratory mindsets identified within the simulation framework. The communication examples were designed to reflect possible differences in emotional reassurance, cognitive burden, healthcare-navigation preferences, affordability concerns, and recession-related financial vulnerability. These illustrative communication patterns may help support conceptual discussion regarding healthcare communication, insurance-related stress, healthcare-access behavior, and public-health messaging during periods of economic instability.

Table 4: AI-Generated Illustrative Communication Strategies for the Exploratory Insurance Mindsets

Communication Principle	Application
Mindset 1: Security Seekers - Scenario Table	
“When money is tight, it’s natural to worry about what would happen if a medical emergency struck. Insurance exists to protect you from the kinds of bills that can destabilize a family, especially during recession. You’re not alone in feeling anxious — many people quietly fear that one accident could change everything. Keeping coverage is one of the strongest ways to protect your future stability.”	
Emphasize Catastrophic protection	Highlight how insurance prevents financial ruin during medical emergencies.
Acknowledge Emotional fear	Validate worries about bankruptcy, job loss, and family vulnerability.
Normalize Anxiety	Explain that many people feel scared and uncertain during recession.
Reinforce Stability	Frame insurance as a psychological anchor in unstable times.
Mindset 2: System Navigators	
“Insurance shouldn’t feel like a puzzle you need a degree to solve. You can compare plans quickly by focusing on just three numbers, and you can understand your benefits in under five minutes with the right guide. Many people feel frustrated and overwhelmed, even if they don’t say it out loud. Clear steps and simple tools can help you make a confident decision without spending hours researching.”	
Simplify Complexity	Provide number comparison tools and five minute summaries.
Reduce Cognitive Load	Offer checklists, templates, and step by step guidance.
Clarify Jargon	Translate deductibles, networks, and out of pocket limits into plain language.
Highlight Efficiency	Emphasize time saving shortcuts and quick decision pathways.
Mindset 3: Cost Focused Realists	
“When every dollar matters, it’s important to know that many people qualify for subsidies or employer support without realizing it. Insurance can feel like a burden, but it often prevents far bigger costs down the road. You’re not the only one quietly wondering how to balance rent, groceries, and premiums. Choosing a plan that adapts to your income can help you stay protected without sacrificing financial stability.”	
Address Financial Survival	Show how subsidies, employer support, and budgeting strategies reduce burden.
Validate Economic Fear	Acknowledge the reality of choosing between premiums and essentials.
Emphasize Flexibility	Highlight plans that adapt to fluctuating income.
Reinforce Long Term Savings	Show how staying insured prevents catastrophic debt.

The overall purpose of the present framework was exploratory and hypothesis-generating rather than predictive. This AI-assisted Mind Genomics backgrounder was intended to examine whether simulated communication-oriented modeling might help organize psychologically meaningful interpretive patterns relevant to healthcare affordability, insurance-related stress, healthcare-access behavior, and recession-related public-health communication.

Exploratory Interpretation of the AI-Generated Mindsets

The exploratory mindset structures generated within the AI-assisted framework suggested that health-insurance decision-making during periods of recession-related stress may involve interacting emotional, cognitive, and financial pressures that are not always fully captured through conventional survey approaches. The simulated mindset structures highlighted possible differences in how individuals interpret insurance-related communication under conditions of uncertainty, perceived vulnerability, cognitive overload, and financial strain. These exploratory insights may help support communication approaches that are more context-sensitive and aligned with recession-related healthcare-access concerns.

At the same time, the present framework remains conceptual and AI-assisted in nature. The communication structures, coefficient patterns, and mindset interpretations presented here were generated within a synthetic exploratory environment rather than derived from empirical human-subject data. Consequently, the findings should be interpreted as hypothesis-generating conceptual models

rather than validated epidemiologic conclusions or population-level behavioral estimates.

The exploratory framework also raises broader methodological questions regarding the potential role of AI-assisted conceptual modeling in early-stage healthcare communication research. Although empirical validation remains essential, AI-assisted backrounders may potentially function as preliminary exploratory tools for identifying psychologically meaningful communication themes prior to larger human-participant investigations. Rather than replacing conventional epidemiologic or behavioral studies, such exploratory frameworks may help organize initial hypotheses, identify possible interpretive patterns, and highlight communication areas warranting future empirical evaluation.

The synthetic mindset structures generated within the present framework were further examined conceptually in order to explore possible psychological architectures underlying recession-related insurance interpretation. These exploratory architectures focused particularly on emotional protection, cognitive burden, affordability concerns, healthcare-system navigation, and perceived financial vulnerability during insurance-related decision-making.

Table 5 presents the exploratory psychological architectures associated with the three AI-generated insurance communication mindsets identified within the simulation framework.

Table 5: Exploratory Psychological Architectures Associated with the Three AI-Generated Insurance Communication Mindsets

Security Seekers experience insurance as emotional protection rather than a financial product, responding most strongly to messages that acknowledge fear, vulnerability, and the threat of catastrophic medical bills. Their private thoughts often revolve around unspoken anxieties such as “One medical emergency could destroy everything I’ve built,” which institutions rarely hear because people feel ashamed to admit fear. Companies and government agencies can use these insights to design communication that validates emotional reality and reduces the stigma around financial insecurity.
System Navigators interpret insurance through the lens of complexity, clarity, and cognitive load. They are not primarily afraid of medical bankruptcy but of making the wrong choice because the system feels opaque, bureaucratic, and overwhelming. Their private thoughts often include frustration and self doubt, such as “I feel stupid for not understanding this,” or “Why does this have to be so complicated?” Institutions can use these insights to simplify communication, reduce jargon, and provide clear decision pathways that restore a sense of competence.
Cost Focused Realists interpret insurance through the lens of survival, scarcity, and financial triage. They are acutely aware of the trade offs between premiums, rent, groceries, and debt, and they privately think thoughts like “I’m drowning, and insurance might push me under,” or “I can’t afford to be responsible the way they expect me to be.” These thoughts rarely appear in surveys because people fear being judged as irresponsible or uninformed. Companies and government agencies can use these insights to design dignity preserving communication that acknowledges economic hardship and offers flexible, realistic pathways to coverage.

The exploratory psychological architectures described above were subsequently used to generate illustrative communication-oriented strategic approaches within the AI-assisted framework.

Table 6: Exploratory Communication-Oriented Strategy Recommendations and Potential Interpretive Consequences within the AI-Assisted Framework

Design communication that directly acknowledges the emotional and financial realities of recession era decision making. This approach increases relevance by validating the private thoughts people rarely express, such as fear of bankruptcy, confusion about plan details, or shame about financial instability. When individuals feel understood rather than judged, they become more open to guidance and more willing to engage with insurance decisions. The expected consequence is increased trust, reduced avoidance, and greater willingness to maintain coverage during economic downturns.
Simplify the insurance decision process by reducing cognitive load and offering clear, actionable tools. This reframing helps individuals who feel overwhelmed by jargon, complexity, and the fear of making a costly mistake, especially during periods of financial scarcity. When people are given three number comparison tools, five minute summaries, and step by step guidance, they regain a sense of competence and control. The expected consequence is improved comprehension, faster decision making, and fewer errors that lead to underinsurance or financial harm.
Make explicit the affordability, flexibility, and hidden financial supports such as subsidies, employer contributions, and income based adjustments. This approach directly addresses the private fears of Cost Focused Realists, who often feel they must choose between essentials like rent, food, and premiums. When communication highlights realistic pathways to coverage that do not require financial sacrifice beyond capacity, individuals feel respected and empowered rather than pressured. The expected consequence is higher enrollment, reduced medical debt, and improved continuity of care during recession.

Use AI-generated Mind Genomics backgrounders as a tool to understand the unspoken mind of citizens and clients. This method reveals the quiet calculations, emotional undercurrents, and hidden motivations that traditional surveys fail to capture, especially during economic crisis. When institutions understand not only what people say but what they privately think, they can design policies and communication that align with lived experience rather than abstract assumptions. The expected consequence is more humane policy design, stronger public trust, and improved uptake of essential health insurance programs.

Combining Mind Genomics with AI to Create Backgrounders which Get a Person ‘Up to Speed’

The exploratory framework presented in this backgrounder suggests that recession-related insurance decision-making may involve interacting emotional, cognitive, and financial pressures extending beyond simple comparison of premiums or deductibles. Economic uncertainty, financial strain, cognitive overload, and perceived healthcare vulnerability may potentially influence how individuals interpret insurance-related information and healthcare-access decisions during periods of recession-related stress [1,3].

Within this AI-assisted exploratory framework, communication approaches emphasizing clarity, affordability, emotional reassurance, and simplified healthcare navigation appeared to align with several of the simulated interpretive architectures generated through the Mind Genomics-inspired model. Although the present work does not represent a conventional epidemiologic or behavioral-outcomes investigation, the exploratory findings may nevertheless help illustrate how psychologically informed communication strategies could potentially support healthcare-access discussions and insurance-related public-health messaging during periods of financial instability.

The framework also highlights the possible public-health relevance of maintaining continuity of health-insurance coverage during economically stressful periods. Previous health-policy and healthcare-affordability literature has suggested that loss of insurance coverage or underinsurance during periods of economic disruption may contribute to delayed healthcare utilization, financial strain, and barriers to continuity of healthcare access [8,9]. Within this context, communication strategies that reduce confusion, simplify healthcare navigation, and acknowledge financial stress may potentially support more informed and psychologically accessible insurance-related decision-making.

The present backgrounder further suggests that healthcare communication during recession-related uncertainty may benefit from approaches that acknowledge emotional stress, cognitive burden, and affordability-related concerns in a manner that preserves dignity and reduces perceived judgment. Rather than assuming fully rational comparison behavior under conditions of financial scarcity, the exploratory framework supports the possibility that insurance-related communication may be interpreted through broader emotional and psychological contexts involving fear of debt, uncertainty regarding healthcare costs, confusion about system complexity, and concerns regarding financial survival.

At the same time, several important limitations should be recognized. This work was entirely exploratory and AI-assisted in nature and did not involve human participants, epidemiologic sampling, patient interviews, survey administration, or clinical-outcomes analysis. The coefficient structures, mindset architectures, and communication interpretations were generated within a synthetic simulation environment and therefore should not be interpreted as validated population estimates or empirical behavioral findings.

In addition, the exploratory mindset structures presented here were conceptual communication-oriented groupings rather than clinical, demographic, or diagnostic categories.

The present framework should therefore be viewed primarily as a hypothesis-generating conceptual backgrounder intended to explore possible communication patterns relevant to healthcare affordability, insurance-related stress, and recession-related healthcare decision-making. Future empirical studies involving human participants, population-based sampling, and real-world healthcare-access outcomes would be necessary to evaluate the validity, reproducibility, and practical utility of the exploratory communication architectures described in this work.

Despite these limitations, the present backgrounder illustrates how AI-assisted Mind Genomics modeling may potentially serve as an early-stage exploratory tool for organizing psychologically meaningful communication themes relevant to healthcare affordability and public-health communication. By rapidly generating structured interpretive frameworks and simulated communication architectures, AI-assisted exploratory modeling may help researchers, insurers, healthcare organizations, employers, and policymakers identify areas requiring deeper empirical investigation before conducting larger human-subject studies.

More broadly, the combination of AI-assisted conceptual modeling and Mind Genomics-inspired interpretive segmentation may provide a potentially useful framework for exploring healthcare communication challenges involving uncertainty, financial stress, cognitive burden, and healthcare-access vulnerability. Within public-health and healthcare-policy contexts, such exploratory backgrounders may help generate preliminary hypotheses regarding how emotionally sensitive, cognitively accessible, and dignity-preserving communication approaches could potentially support healthcare engagement during periods of economic instability.

Conclusion

This AI-assisted exploratory Mind Genomics backgrounder suggests that health-insurance decision-making during periods of recession-related stress may involve complex interactions among emotional vulnerability, cognitive burden, affordability concerns, and perceived healthcare insecurity. The simulated interpretive mindsets generated within the framework illustrate how individuals may respond differently to insurance-related communication under conditions of financial uncertainty. Although the present work was conceptual and hypothesis-generating rather than empirical, the framework highlights the potential value of psychologically informed, dignity-preserving, and cognitively accessible communication strategies in healthcare affordability and public-health contexts. Future human-participant research may further evaluate the practical relevance and real-world applicability of these exploratory communication architectures.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

Appendix: A Summary Policy Brief: Health Insurance Decision-Making During Personal Economic Stress and National Recession

Executive summary: Economic recession and personal financial strain may substantially influence how individuals evaluate and choose health-insurance plans. Scarcity-related stress may reduce cognitive bandwidth, increase emotional vulnerability, and shift attention toward short-term costs rather than long-term protection. The present AI-assisted exploratory Mind Genomics framework identified three simulated interpretive mindsets relevant to insurance-related decision-making: Security Seekers, System Navigators, and Cost-Focused Realists. Although exploratory in nature, these simulated communication architectures may help policymakers, insurers, employers, and public-health communicators explore approaches intended to reduce confusion, improve clarity, and support healthcare coverage engagement during periods of economic instability.

Key Exploratory Observations: The present framework suggests that insurance-related decisions during recession may involve emotional stress, financial uncertainty, and reduced cognitive flexibility rather than purely rational comparison of insurance-plan features. Within the exploratory model, Security Seekers appeared to prioritize catastrophic protection and emotional stability, often reflecting concerns regarding unexpected medical emergencies and financial insecurity. System Navigators appeared more focused on complexity reduction and simplified healthcare navigation, whereas Cost-Focused Realists appeared particularly sensitive to affordability concerns and the perceived competition between insurance costs and basic living expenses. These exploratory interpretive tendencies may help illustrate how different communication approaches could potentially resonate under conditions of financial stress.

Potential Implications for Policymakers: The exploratory framework suggests that recession-related stress may create psychological and cognitive barriers affecting healthcare coverage decision-making and insurance engagement. Communication strategies based solely on technical comparison of deductibles, premiums, and network structures may not fully address the emotional and cognitive pressures experienced during economic instability. Public-health communication efforts may therefore potentially benefit from approaches that acknowledge financial stress, reduce cognitive burden, simplify healthcare navigation, and preserve dignity during insurance-related decision-making.

Exploratory Policy-Oriented Communication Strategies: One possible communication-oriented strategy involves simplifying insurance materials through standardized comparison formats designed to reduce cognitive overload during periods of financial stress. Another potential strategy may involve expanding automatic enrollment or renewal systems in order to reduce decision burden among individuals experiencing recession-related stress or uncertainty.

The exploratory framework also suggests that increasing visibility of subsidies, employer support mechanisms, and income-adjusted insurance options may potentially improve perceived affordability among financially vulnerable groups. Similarly, simplified plain-language summaries may help improve interpretive clarity among individuals who experience insurance systems as cognitively overwhelming or excessively complex.

Finally, the present framework suggests that emotionally sensitive communication acknowledging uncertainty, financial vulnerability, and recession-related stress may potentially support more psychologically accessible public-health messaging while reducing perceived stigma surrounding financial hardship.

Communication Guidance for Government and Industry: The exploratory mindset structures generated within this framework suggest that insurance-related communication may benefit from adapting to different interpretive priorities. Security Seekers may respond more positively to communication emphasizing protection and stability, whereas System Navigators may prefer simplified tools, clear instructions, and jargon-free explanations. Cost-Focused Realists may respond more favorably to communication acknowledging economic hardship while emphasizing realistic and financially accessible pathways to healthcare coverage.

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