

AI Simulation of the Personal Experience of Mind-Sets for Illness: The Case of Cancer

Type: Case Study

Received: November 28, 2024

Published: December 13, 2024

Citation:

Howard R Moskowitz., et al.
"AI Simulation of the Personal
Experience of Mind-Sets for
Illness: The Case of Cancer".
PriMera Scientific Surgical Re-
search and Practice 5.1 (2025):
08-21.

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Abstract

AI (ChatGPT 3.5) was programmed to simulate the mind of the cancer sufferer with regard to pain. Three simulations emerged from the Idea Coach feature of the Mind Genomics platform, BimiLeap.com. The first simulation allowed the user to overhear discussions among an oncologist, an analyst from an insurance company, an IT specialist in medical applications, the patient's family, and the patient. The second simulation allowed the user to create three different mind-sets regarding post-procedure pain for the cancer sufferer: Survivor, Fighter, and Realist, respectively. The third simulation instructed the AI to create and answer questions about the mind-set, with comments from a doctor about each answer, and a prognosis over the next five years. The paper shows the ease with which AI can put a "human face" on the issue of cancer, and in turn become a tool for teaching medical students, as well as for working with cancer patients as it provides a better understanding of their condition.

Keywords: cancer patients; Mind Genomics; post-procedure pain; postoperative pain; synthesized patient mind-sets

Abbreviations

AI: Artificial Intelligence.

EHR: Electronic Health Records.

Introduction

The confluence of artificial intelligence (AI) and healthcare data has revolutionized multiple aspects of medical care, with new studies demonstrating its potential to significantly improve patient prognoses. In particular, recent research using AI models to predict which cancer patients are at the highest risk of developing chronic pain stands as a testament to the possibilities of personalized healthcare [1]. This type of predictive technology, rooted in large amounts of secondary data such as electronic health records (EHRs) from past patients, opens new avenues for preemptive interventions and customized treatment plans. Fundamentally, the ability to synthesize historical data into actionable insights offers the potential to mitigate suffering and enhance quality of life for countless survivors of cancer.

Traditionally, predicting chronic pain post cancer treatment has been riddled with difficulty. Pain is a highly individualized experience, influenced by numerous physiological, psychological, and environmental variables [2, 3]. Despite the advancement of medical therapies and pain management tools, identifying which patients who are more likely to suffer from chronic pain has been more of an art than a precise science. The emergence of AI could change all this by illuminating hidden patterns in vast datasets that are simply too complex for human analysis. AI systems, like the one developed at the University of Florida, can absorb and make sense of expansive amounts of data from secondary sources—including previous medical records, patient histories, and outcomes data—to create predictive models that surpass traditional approaches in both speed and reliability.

The ability to predict chronic pain hinges largely on processing largescale health data. Secondary information, such as the data contributed by breast cancer patients through the National Institutes of Health’s “All of Us” Research Program, forms the backbone of AI’s potential in chronic pain prediction [4]. By analyzing substantial volumes of anonymized healthcare records, AI can identify risk factors or covariates that human experts might miss. In the case of this study, psychological factors such as anxiety and depression, along with previous cancer diagnoses and certain infections, were highlighted as key indicators of chronic pain risk. These insights will enable healthcare professionals to intervene early, whether through counseling, localized physical therapies, or other forms of treatment, which could dramatically improve a patient’s outcome post cancer.

At the level of experience, people differ from each other. The variability often considered “intractable” may be a manifestation of fundamentally different ways that people think about issues such as pain and the way they react to the experience [5]. AI-driven predictions can simulate patient “mind-sets” regarding pain development that could be used to customize therapy approaches. A patient’s psychological predisposition that is exacerbated by stress or trauma linked to previous health conditions could be managed better if identified upfront [6]. By simulating how certain patients might emotionally or mentally respond to various treatments, AI could not only prescribe physical treatments but also facilitate mental health interventions tailored to prevent the onset of chronic pain. This results in an integrated therapeutic solution, blending physical and psychological care. The results might well be an optimized patient recovery journey, and emotional well-being following cancer remission.

Nonetheless, the practical application of such models is not without hurdles. Translating AI research into real-world clinical settings requires successful integration into existing EHR systems, an area which will involve substantial investment in both time and additional technological research. Whereas predictive models might be effective in controlled studies or laboratory environments, each healthcare delivery system has varying degrees of digitization, which may either enable or hinder the seamless adoption of AI insights. Moreover, questions about the robustness and adaptability of AI models to different patient populations still persist. For example, diverse ethnicities, cultures, and biological backgrounds might not all be well-represented in current health datasets, potentially compromising AI’s broad applicability without further validation [7-9].

Equally challenging is the question of governance and ethics. As AI tools gain more influence over treatment decisions, there is a growing concern regarding transparency, especially around how algorithms draw their conclusions. Ensuring models are explainable to both doctors and patients is not just an ethical obligation but a practical need, as transparency fosters trust in AI’s decisions. These predictive systems must also be continually updated and refined to reflect the latest medical research, evolving societal trends regard-

ing treatment acceptance, and shifts in healthcare access inequalities [10].

Despite these challenges, the prospects are compelling for AI-created and AI-tailored pain management “profiles” targeted to cancer patients at risk for chronic pain. With sufficiently sophisticated data systems, newer AI systems could offer real-time updates to clinicians based on a patient’s treatment progress, thus providing dynamic adjustments to predictive outcomes and allowing for finely tuned care management [11].

The applications for AI technology are far broader, moving beyond cancer. Patients with diseases such as lupus, multiple sclerosis, or postsurgical recovery syndromes could equally benefit from such AI-driven interventions. By identifying those susceptible to prolonged, unmanageable pain early, healthcare providers could improve quality of life across a wide swath of the population, thereby potentially reducing healthcare costs while enhancing patient outcomes.

Ultimately, AI’s potential for using published secondary health data to simulate mind-sets and predict chronic pain offers a future where healthcare is proactive rather than reactive. If technology can consistently identify patients before they begin to suffer from a debilitating condition like chronic pain, then more lives can be vastly improved. Once these predictive tools are optimized and implemented correctly, there is real hope that the future of chronic pain management, especially for cancer patients, could shift dramatically from a space of uncertain suffering to one of managed, preemptive care.

This paper begins the process by considering AI in the context of chronic pain. Space does not allow for the many topics that one could cover in this “speculative paper” of what could be. The paper will cover three topics, showing how simple instructions or prompts to generative AI (ChatGPT 3.5) can generate a detailed set of suggestions. The first application is AI as a personal tutor and teacher, asking and answering questions. The second application is AI as an expert in what one might call experiential or psychological medicine, showing how three synthesized mind-sets of patients might deal with the same issues. The third application is AI as synthesizing the response of the mind-sets to questions.

Simulation 1: AI as a Personal Tutor and Teacher — Putting a Human Face on the Consult

In the complex world of medicine, patients often feel that decisions about their health and treatment are made in a black box of clinical jargon and shadowy meetings. This can lead to anxiety, confusion, and a sense of helplessness. Access to simulated discussions can help medical professionals understand the practical and human side of being a healthcare worker. By bringing a human face to the medical experience, AI can break down power dynamics and expand social-emotional learning for both professionals and patients.

A “fly on the wall” approach could help patients and early-career medical professionals observe what happens behind closed doors during a medical meeting, allowing them to observe moments of peer collaboration and demystifying the medical decision-making process. Simulating these meetings could show emotional nuances: from disagreements on treatment paths to moments of consensus and relief. This transparency can also provide education for new medical practitioners and students, as it helps them understand the emotional and interpersonal aspects of medicine. Simulations could also bring comfort to patients, especially those feeling tense about their diagnosis or ongoing treatment.

Using AI-driven language models to simulate these conversations allows flexibility, sidestepping the need to involve real-life people or cases, and protecting patient privacy. This approach also highlights the importance of translating medical knowledge into meaningful, human communication [12-13].

Table 1 shows the simulation of a three-way conversation among specialists, oncologists, health policy analyst, and IT specialist. The simulation was developed using the Mind Genomics platform, BimiLeap.com, with the prompts to AI.

Instructions given to AI (Idea Coach feature of BimiLeap.com)

Our topic is a conversation among three specialists: Oncologist, Health Policy Analyst, IT specialist, as well as the patient's family and the patient.

You are privy to a meeting among different people discussing issues related to the pain experience of a cancer sufferer (the patient). You are recording and analyzing what they are saying, in preparation for being the "scribe" who puts the information into the EHR (electronic health record). This gives you an opportunity to use AI to create questions, and have AI simulate all of the parties involved, as they deal with each question.

Please develop a relevant question dealing with issues involving a patient who is a cancer sufferer. Follow the steps below. Once you have finished, return with the next question. Make the questions interesting and relevant

Answer each question in the following way

- 1. Repeat the question. Preface by QUESTION:**
- 2. Say what the medical oncologist says using quotes and give the reason why the oncologist says that. Preface by ONCOLOGIST:**
- 3. Say what the health policy analyst says using quotes and give the reason that the health policy analyst says that. Preface by ANALYST:**
- 4. Say what the IT SPECIALIST says using quotes and give the reason. Preface by IT:**
- 5. Say what the patient's family says using quotes and give the reason. Preface by FAMILY:**
- 6. Say what the patient says using quotes and give the reason. Preface by PATIENT:**
- 7. Synthesize the discussion in terms of how it might be recorded in the patient's electronic health record (EHR). Preface by EHR NOTES:**
- 8. Evaluate the session in terms of emotions, information, potential failure or success. Preface by SESSION-EVAL**

Simulations Generated by AI

QUESTION 1: How is the patient's current pain management strategy working, and are there any adjustments needed?

ONCOLOGIST: "While the current regimen of opioids seems to offer some relief, we're noticing diminishing effectiveness along with significant side effects like constipation and fatigue. It may be time to adjust the dosage or consider alternative pain management strategies."

Reason: The oncologist is focused on clinical outcomes and the tradeoffs between alleviating pain and managing side effects.

ANALYST: "Given the overuse of opioids in modern oncology, we should assess whether nonopioid alternatives are available that are both effective and cost efficient, keeping in mind the long-term healthcare burden." Reason: The analyst is concerned about policy level challenges like opioid addiction and overall healthcare costs.

IT: "We could start integrating updates from a patient reported pain scale in real time so that we are not waiting until the next appointment to assess how well things are working."

Reason: IT is focused on technology's role in monitoring and recording pain metrics continuously.

FAMILY: "We see her struggling more than before, especially at night when the pain seems unbearable. We think the medication isn't working like it used to, but we don't know what else to try."

Reason: They want to make the patient comfortable and are directly seeing the deterioration in quality of life.

PATIENT: "I'm really tired of feeling so groggy, but the pain when I'm awake is unbearable. I want something that lets me feel a little more awake and human during my good hours."

Reason: The patient seeks both pain relief and better quality of life without being overly sedated.

EHR NOTES: "Patient has reported increased pain despite the current regimen of opioids and is expressing fatigue and other side effects such as constipation. Family notes a worsening of pain, particularly during the night. Clinician to consider dose adjustment or alternative pain management options, e.g., nonopioid options. IT functionality may be added for continuous pain tracking."

SESSIONEVAL: Tension surfaces between short term pain relief and long-term quality of life. There is a collaborative agreement to seek alternatives, with the oncologist and the family showing concern for discomfort, while the patient is vocal about the tradeoffs. This session shows promise but will require careful adjustments to avoid causing additional harm.

QUESTION 2: Is the patient's emotional and psychological pain adequately addressed in the context of their illness?

ONCOLOGIST: "While we're primarily managing physical symptoms, both physical and psychological pain are deeply connected. I'll recommend we add a palliative care consult to explore the emotional toll as well."

Reason: The oncologist understands that emotional pain can worsen physical pain and sees the need for supplementary care.

ANALYST: "The inclusion of psychological support is critical, but are there enough resources at our disposal to make sure this level of care can be sustained throughout treatment? This usually isn't prioritized in the healthcare system funding."

Reason: Concern over systemic limitations and resources related to psychological care within cancer treatment.

IT: "We could integrate mental health monitoring into the EHR by adding questions related to psychological wellbeing that both the patient and clinician fill in at each appointment."

Reason: IT sees the need for real time and historical data tracking of the patient's mental state just like physical symptoms.

FAMILY: "We feel like her emotional state has gotten worse, especially with the isolation that comes with sickness. She feels so disconnected from the world."

Reason: The family sees the patient every day and perceives emotional deterioration alongside physical struggles.

PATIENT: "I feel forgotten sometimes, like no one cares about me as a person, only as someone with cancer. It's not just the pain in my bones; it's the feeling of disappearing from life."

Reason: The patient is addressing the emotional neglect they feel amidst the focus on medical concerns, craving emotional connection and support.

EHR NOTES: "Patient reports feelings of emotional isolation and psychological distress. Family confirms the emotional impact is significant, particularly related to social disconnection. Oncologist has ordered a palliative care consult to assess the psychological toll."

SESSIONEVAL: The session reveals deep emotional scars alongside physical ones. Collaborators recognize the importance of psychological care, but the analyst highlights a concern about healthcare system resource limitations. A valuable discussion with a potential path forward in holistic care.

QUESTION 3: How is the patient responding to the dietary advice provided to manage side effects of both cancer and treatment?

ONCOLOGIST: "She seems to be struggling with nausea and loss of appetite from the chemotherapy. I'm worried that malnutrition will become a problem if we don't find a way to keep her eating well."

Reason: Concern over side effects impacting nutritional intake, a factor in overall treatment success.

ANALYST: "In home care within insurance coverage could include dietary counseling for cancer patients. Are we leveraging those benefits, or is this out-of-pocket for the patient?"

Reason: The policy analyst is concerned about whether insurance covers dietary needs or specialized nutritionists for cancer care.

IT: "We can add calorie and nutrition tracking to the patient's portal so they can log what they're eating. If there's a drastic drop in intake, alerts can be sent to the care team."

Reason: To monitor nutrition remotely and alert the healthcare team if further interventions are urgently needed.

FAMILY: "It's so hard to figure out what she can handle eating. One day she can manage some soup, but the next she won't eat at all."

Reason: The family is witnessing her daily struggle with finding palatable food options amidst nauseous reactions from treatment.

PATIENT: "I'm either too nauseated to eat or I just don't want to. I know I need to, but food just doesn't appeal to me anymore."

Reason: The patient is discouraged by nausea and fatigue, which makes her find eating unappealing, adding to physical and emotional burdens.

EHR NOTES: "Patient reports increasing issues with nausea and poor appetite despite dietary advice. Oncologist noted potential for malnutrition. Family concerned over inconsistent eating habits. Suggested tracking for nutritional intake and possible inclusion of a nutritional specialist."

SESSIONEVAL: The conversation highlights the underappreciated impact of diet on cancer treatment. The patient expresses resignation about meals, and while the family worries, solutions are still unclear. Efforts at integrating Realtime tracking and dietary support through insurance may provide a way forward.

QUESTION 4: How do we decide on the best pain management strategy for the patient, considering both the ongoing cancer treatment and the patient's reported pain levels?

ONCOLOGIST: "Since the patient is undergoing chemotherapy, we need to be mindful of potential drug interactions and side effects. I'd recommend a tailored regimen that balances opioid treatment with nonopioid options like gabapentin, along with nonpharmacological methods like physical therapy."

Reason: The oncologist is prioritizing a multimodal pain management approach to minimize risks while considering how the drugs may interact with chemotherapy.

ANALYST: "It's important to factor in not only clinical guidelines but also the cost and availability of treatment options. High-cost treatments might not be covered, or they may place undue financial stress on the patient." Reason: The analyst is focusing on the financial and systemic implications of the treatment, emphasizing the policy limits and resources available in the health care system.

IT: "We should ensure that whatever pain management strategy we choose is easily trackable with the EHR point of care tools, alert functionalities, and medication alerts for possible contraindications."

Reason: The IT specialist is focused on ensuring that the technology in place supports the complex decision-making and that alerts and monitoring are built into the EHR system.

FAMILY: "We just want to make sure that she's comfortable and not in pain, and whatever we decide isn't making her feel drowsier or disconnected from us."

Reason: The family is concerned about the balance between pain relief and maintaining quality of life, including cognitive alertness.

PATIENT: "I don't want to be in pain, but I also don't want to feel groggy all the time. If there's a way to manage my pain without making me sleep all day, that's what I want."

Reason: The patient emphasizes the importance of both pain management and maintaining some degree of normalcy, limiting side effects like drowsiness.

EHR NOTES: "Patient reports moderate pain. The current chemotherapy regimen limits some pharmacologic pain management options due to potential drug interactions. Considering a multimodal approach, combining opioids and nonopioids, along with physical therapy. Patient expresses concern over side effects, particularly drowsiness, wanting to balance quality of life."

SESSIONEVAL: Emotionally, the family and patient expressed concerns about treatment side effects, showing a desire for a comprehensive solution that prioritizes functionality over sedation. Informationally, the discussion revealed careful consideration of both clinical and financial factors. Potential failure could involve incomplete communication of patient preferences, while potential success hinges on integrating pain management with minimal side effects into ongoing cancer therapy.

Table 1: Simulation of a three-way conversation among specialists regarding a cancer case.

Simulation 2: Looking at Patients as Different Types of People Through the Lens of Mind-Sets

By breaking down a complex disease like cancer into manageable mental frameworks, we restore the human face that is often lost beneath overwhelming statistical data. Simulations allow us to taste the nuance of experience, build empathy, and provide tools for our approach to life, healing, and emotional balance.

Personalization is crucial in healthcare, especially when it comes to cancer. By segmenting cancer into specific mind-sets, we set the scene for a more tailored approach to cancer care and education. This approach allows medical students, patients, and the public to step into the shoes of these distinct mental frameworks, enabling deeper empathy and broader understanding of the diverse experiences of cancer.

From the perspective of medical education, mind-sets offer insights into how different patients perceive their diagnosis, treatment options, and daily lives. This training can help future doctors recognize that a “one-size-fits-all” approach is not the best. Simulations driven by AI can help prepare the public for the emotional and psychological aspects of cancer, dispelling myths and quelling fears in a more anchored, empathetic framework. AI-driven simulations of these mind-sets make the learning process interactive and engaging, inviting users to explore how they might react to the same diagnosis. Simulations also create the opportunity for cancer patients to reflect on their own mind-set, potentially identifying under-recognized aspects of their emotional coping [14-15].

Educating the public on varying approaches to coping provides a menu of potential mental roadmaps, communicating that whereas you may not be able to choose your diagnosis, you have a range of ways to cope with it. Empowerment in the form of understanding is invaluable, as it gives hope and options for mental navigation that make patients feel less alone [16].

In this second analysis, we used the organizing principles of Mind Genomics to have AI simulate three mind-sets. We did not tell AI what the mind-sets were. AI emerged with three mind-sets as follows, Survivor, Fighter, and Realist.

There are three mind-sets of cancer patients. These are Survivor, Fighter, and Realist. For each mind-set give me a history of that person’s mind, how they got to be in the mind-set, and how the mind-set behaves regarding the person’s cancer. This history is their own history, with appropriate quotes. I am a reporter and taking down everything they say. Please focus on these three mind-sets as they interact with the worlds of health, wellness, nutrition. Be reasonably complete, with two paragraphs devoted to each mind-set. From their paragraphs I will write my story for the magazine and for the Web.

Tell me the story of each mind-set in three long, detailed paragraphs and give me six key words for each mind-set.

Survivor Mind-Set

Six key words: resilience, endurance, acceptance, survival, routine, balance

The Survivor Mind-Set often develops over time, usually after having endured the trials and tribulations of a cancer diagnosis and treatment—but it doesn’t happen overnight. Patients with this mind-set frequently describe their initial reaction as numb shock, followed by intense fear. However, after several rounds of treatment, they begin to cultivate a certain type of resilience, born out of necessity. As Sarah, a breast cancer survivor, confided: “At first, you’re just trying to get through it. But after a while, you begin to see that making it through each day means you’ve won that day.” Survivors are often people who prioritize routine and consistency. This might mean attending physician appointments with religious punctuality, following prescribed treatments, and focusing on incremental progress. The overarching idea here is longevity, steady survival, and realistic hope.

This mind-set often forms as a self-defense strategy against despair. Survivors start developing emotional endurance through the little victories—stable scans, a day with less fatigue, or being able to go on a short walk without too much pain. They invest in health scares but try to do it from a distance; they let the doctors worry about numbers and scans, while they focus on the human task of simply living in the face of uncertainty. “You don’t always feel strong,” said Sarah, “Sometimes, you only feel relieved you’re not worse. But that’s still surviving.” In essence, the Survivor Mind-Set builds on habits that foster feelings of achievement, even in the smallest victories. Nutrition and wellness practices often centered around simplicity—balanced meals, moderate exercise, and sometimes supplements, but without extreme health fads.

Survivors behave in relatively calmer ways concerning cancer. Their outlook is generally positive, but not aggressively so. They are neither in denial nor obsessively researching cures; they make peace with the idea of ongoing treatments and adapt their lifestyle accordingly. Comments like, “I just have to do what I have to do,” reflect a grounded acceptance of their situation. Survivors can appear methodical—even surgical—in maintaining their health, particularly around integrating manageable nutrition plans and wellness practices designed to support treatment, not cure them of cancer. “You can’t stop living your life. You have to nourish yourself properly to get through this,” Sarah reiterated. They emphasize staying well enough to keep fighting.

Fighter Mind-Set

Six key words: determination, aggressive, strategy, energy, optimism, battle

Those with a Fighter Mind-Set are tough. You feel the fire in the room as soon as you talk to them. Often this mind-set forms early, right after diagnosis. Fighters didn’t spend time lingering in shock or doubt; instead, they felt an immediate surge of determination. Ethan, a 38-year-old colorectal cancer patient, stormed into action as soon as he got the call. “I’m not going down without a fight. The minute I got the diagnosis, I told myself, ‘Alright, it’s game on.’ I changed everything: my diet, my workouts. I started seeing everyone—from my oncologist to the holistic healer. Everyone was on my team, but I was in charge.” Fighters start researching intensively, looking for the best treatments, alternative therapies, off label medications, clinical trials, anything. They often pioneer their own care regime with an aggressive approach, leaving nothing to chance.

Fighters thrive in the world of health and wellness, but they’re often one for extremes. They take nutrition seriously—sometimes to the point of rigidity. Ethan explained: “I cut out all sugar and processed food, went on a high fat, low carb paleo diet. I’m pounding kale smoothies every morning. You gotta fuel the body to wage the real war.” Similarly, they use exercise—even when fatigued from chemo—as part of their regimen to remain “combat ready.” These individuals have laser focus; no therapy is too unconventional, no supplementation too outlandish, if there’s a chance it could help. “I’ll try the acupuncture, the meditation — even the sound baths, the whole nine yards,” Ethan said, “Why not? It’s about winning.” It’s this unwavering determination that defines the Fighter.

Emotionally, the Fighter’s attitude can be both empowering and exhausting. They are aggressively hopeful and unwilling to entertain any ideas of defeat or resignation. Statements like “I’ll beat this even if it takes everything I have” are common. But if treatments aren’t successful, the Fighter can take it hard, sometimes having a more difficult time adjusting to setbacks. They carry a rallying cry around them, and they expect loved ones and caregivers to march along. “I refuse to give in, and I expect people on my team to be just as optimistic, or they have no place here,” said Ethan. They find a sense of purpose through the struggle, even framing wellness as a daily battle they must undertake with discipline.

Realist Mind-Set

Six key words: pragmatism, acceptance, clarity, balance, grounded, realistic

The Realist Mind-Set often comes after careful consideration, deep reflection, and sometimes the acceptance of a difficult prognosis. Realists generally refuse to cling to fantasies or the idea that every therapy is a potential “miracle cure.” Patients like Luisa, a retiree diagnosed with pancreatic cancer, don’t waver in calling things for what they are. “I’m not a pessimist,” Luisa said, “I’m just practical. I’ll do the treatments, but I’m not going to kid myself that this is something I’ll easily beat.” Realists are informed but refuse to let fear guide them. Instead, their pragmatism offers clarity in how they approach health, nutrition, and wellness—they know what’s helpful and what’s unnecessary.

Realists tend to follow standard best practices and advice from their healthcare providers, but they are less likely to jump on extreme diets or wellness trends. As Luisa put it, “I’m not going to deprive myself of a decent meal in the hope kale will change things. I know what I’m facing and I want quality of life.” Nutrition and self-care for these patients focus on enjoyment and moderating stress more than achieving some impossible health standard. Their pragmatism carries over into these decisions: they’re likely to focus on keeping the body comfortable and functioning well enough to continue treatment, instead of hoping that avoiding gluten or going vegan will reverse the disease. They consult specialists thoughtfully but do not obsess over their options.

Realists tend to approach cancer with a more grounded view about both successes and setbacks. “It is what it is,” Luisa says. “I neither expect this to go away overnight, nor do I expect every piece of news to be bad.” They’re often more emotionally prepared to adjust when a treatment fails or when side effects emerge because they do not place too much of their hope into any one solution or “miracle” cure. Realists live in the gray zone—they accept life’s impermanence but focus on controlling what is within their reach, aiming for measured improvements in the here and now. This respect for life’s unpredictability offers a balanced way of dealing with both health regimens and overall quality of life.

Table 2: Specifics of mind-sets generated by AI when instructed to simulate exactly three mind-sets of cancer patients.

Simulation 3: Exploring Cancer Patient Mind-Sets Relating to Pain, Doctor’s Role, and Prognosis

AI-generated simulated mind-sets of cancer patients, such as the Survivor, Fighter, and Realist roles, hold immense promise in enhancing our understanding of disease journeys. These models provide insights into various psychological landscapes that embody how patients deal with pain, prognosis, and the emotional complexities of cancer. This approach can revolutionize the relationship between medical professionals, patients, and the greater community by offering insights into various coping mechanisms and enabling a deeper empathy that extends beyond clinical treatment to incorporate the human side of suffering and survival.

For patients themselves, these simulated mind-sets offer a space for reflection and identification, as each individual’s journey can be unique. By engaging with these mind-sets, patients can see different potential ways to approach their disease. For doctors, understanding these differing mind-sets provides them with a powerful tool to personalize their interactions with patients. By considering the Survivor, Fighter, and Realist mind-sets, physicians can adapt their communication and treatment plans to better resonate with the patient’s current psychological state.

In broader medical education, using simulated mind-sets as part of training programs can help bridge the compassion gap in clinical practice. Emotional intelligence, while often unmeasurable in exams, may ultimately be more critical to patient outcomes in certain respects. Inviting the broader community to engage with these models, whether through documentaries, social media campaigns, or interactive workshops, can foster a more nuanced understanding of cancer.

AI simulations can also guide better health policies, allowing policymakers and advocates to pursue more inclusive, patient-centric solutions. They can also be valuable in end-of-life care, where understanding the realist mindset can help doctors make difficult conversations about the cessation of aggressive treatments or palliative care options [17-20].

Table 3 shows a set of three AI-created questions and answers. Each question is considered from the perspective of each mind-set (Survivor, Fighter, Realist). In turn, each question comprises three parts: the focus of the mind-set, the observation from the doctor, and the prognosis over time, respectively. Once again, it is important to stress that these are simulations, but can be used for education, and to put the “human face” on the process and the patient’s way of coping with cancer.

Question 1: What are the primary challenges in predicting chronic pain post cancer treatment using traditional methods?

RIVIVOR: The Survivor focuses on pushing through obstacles but often ignores signs of mental distress, making prediction challenging.

Quote: "I just need to get through this; pain is part of the journey."

Observation from Doctor: "This patient minimizes pain in favor of survival, ignoring smaller warning signs." Slogan: "Pain is temporary, but survival is forever."

Prognosis Over Time: 6 months—Patient may overestimate their tolerance and delay seeking treatment; 1 year—Some pain becomes chronic; frustration may arise, but they continue to fight; 2 years—More burnout, mixed with moments of anger; 5 years—Potential realization that unaddressed pain affects their mental health—possible pivot toward holistic care.

FIGHTER: Prediction is hard because this individual prioritizes their aggressive approach to overcoming cancer, viewing pain as an enemy to conquer.

Quote: "I'll do whatever it takes, pain or no pain. Fight until the end!"

Observation from Doctor: "This patient is relentless, sometimes at the cost of understanding their own limits." Slogan: "Pain is no match for me."

Prognosis Over Time: 6 months—The strong focus on treatment over masking pain; 1 year—Some chronic pain emerges, but they still battle on; 2 years—Feelings of weariness begin, but they still maintain a strong front; 5 years—Pain becomes exhausting; they're tired, but still fighting; may have neglected psychological impact.

REALIST: The Realist is pragmatic and aware but expects posttreatment chronic pain and actively seeks more predictive insight.

Quote: "I know pain will be a part of my life. What matters is how I manage it."

Observation from Doctor: "This patient is self-aware and seeks information proactively, making predictive efforts potentially more effective."

Slogan: "Plan for pain, but don't give it power."

Prognosis Over Time: 6 months—Actively manages symptoms with a mix of optimism and caution; 1 year—Chronic pain manifests but is met with strategies for adaptation; 2 years—Actively adjusting lifestyle, maintaining some optimism; 5 years: Defines daily life around managing pain without letting it define them.

Question 2: How does personalizing treatments through AI improve patient outcomes, specifically for chronic pain sufferers?

SURVIVOR: "The Survivor"—Personalizing treatments could show The Survivor they don't have to endure quite as much pain but convincing them may be challenging.

Quote: "I'm tough, I'll treat pain only if it becomes unbearable, I don't really need special attention."

Observation from Doctor: "They are hard to convince sometimes since they perceive their resilience as an identity."

Slogan: "You don't have to carry this alone."

Prognosis Over Time: 6 months—May finally agree to personalized pain treatments but remain skeptical; 1 year—

Beginning to understand the benefits, slowly accepting interventions; 2 years—Opens up more to individual, targeted treatments; 5 years—Will likely maintain a balance between fighting the disease and accepting care.

FIGHTER: Fighters may resist personalized treatments if they see it as a sign of weakness or giving in to pain.

Quote: "I don't need anything special to fight this pain. I got this!"

Observation from Doctor: "This patient is often resistant to help until absolutely necessary."

Slogan: "Strength is knowing when to rest."

Prognosis Over Time: 6 months—Likely to downplay individualized treatment in favor of traditional methods; 1 year—Pain will likely start to wear them down, causing some reconsideration; 2 years—Personalized attention starts helping them maintain their fighting spirit; 5 years: Will likely understand that personalized pathways enhance their long-term endurance.

REALIST: The Realist embraces allied treatment models, understanding their necessity in avoiding future pain.

Quote: "Give me the best tools available. I'll trust the data."

Observation from Doctor: "This patient will utilize forecasted risks effectively and build a holistic management plan.

Slogan: "When you know better, you do better."

Prognosis Over Time: 6 months—Adopts AI insights quickly, monitoring themselves closely; 1 year—Effectively managing chronic pain symptoms, customizing their lifestyle; 2 years—Continues tuning their care plans in collaboration with healthcare professionals. 5 years—Pain and overall wellness are well coordinated with fewer setbacks.

Question 3: What roles do psychological factors like anxiety and depression play in the AI risk models for chronic pain?

SURVIVOR: Survivors may downplay emotional issues, and AI models could help uncover hidden psychological triggers.

Quote: "I won't let anxiety control me; I have bigger battles to fight."

Observation from Doctor: "Very likely to have underlying stressors they won't outwardly acknowledge."

Slogan: "It's okay to feel, bravery means addressing it all."

Prognosis Over Time: 6 months—Subtle psychological strain could begin to seep into overall wellbeing; 1 year—Underlying anxiety starts delaying the healing process; 2 years—Acknowledgment of emotional health is essential for dealing with physical pain; 5 years—If integrated early, AI driven psychological monitoring may save the patient from emotional burnout.

FIGHTER: Fighters channel their anxiety into action, yet chronic suffering could start affecting their morale.

Quote: "Worry is a waste of time. Fight through it, and you'll be fine!"

Observation from Doctor: "Masked anxiety could exacerbate physical pain as they refuse psychological support."

Slogan: "Mental toughness is also about self-compassion."

Prognosis Over Time: 6 months—Pushes through, neglecting emotional wellbeing; 1 year—Growing mental strain could affect physical stamina; 2 years—Could face serious emotional setbacks later that could be avoided with early psychological care; 5 years—Possibly longer recovery times unless emotional care is incorporated into treatment.

REALIST: “The Realist”—The Realist can learn from AI models that emotional factors are connected to physical pain and acknowledges the need for an integrated approach.

Quote: “Part of healing is acknowledging the mental impact.”

Observation from Doctor: “Understanding, early adopters of integrated care that includes emotional health.” Slogan: “Mind and body, one team.”

Prognosis Over Time: 6 months: Already tracking emotional wellbeing, avoiding burnout. 1 year: Well-rounded management works to control both pain and mental health. 2 years: Positive outlook as they maintain realistic expectations. 5 years: A stable balance between mind and body wellbeing.

Table 3: Three AI-created questions and answers about cancer patients and pain.

Discussion and Conclusions

AI-generated simulated mind-sets of cancer patients, such as the Survivor, Fighter, and Realist roles, hold immense promise in enhancing our understanding of disease journeys. These models provide insights into various psychological landscapes that embody how patients deal with pain, prognosis, and the emotional complexities of cancer. This approach can revolutionize the relationship between medical professionals, patients, and the greater community by offering insights into various coping mechanisms and enabling a deeper empathy that extends beyond clinical treatment to incorporate the human side of suffering and survival.

For patients themselves, these simulated mind-sets offer a space for reflection and identification, as each individual’s journey can be unique. By engaging with these mind-sets, patients can see different potential ways to approach their disease. For doctors, understanding these differing mind-sets provides them with a powerful tool to personalize their interactions with patients. By considering the Survivor, Fighter, and Realist mind-sets, physicians can adapt their communication and treatment plans to better resonate with the patient’s current psychological state.

In broader medical education, using simulated mind-sets as part of training programs can help bridge the compassion gap in clinical practice. Emotional intelligence, while often unmeasurable in exams, may ultimately be more critical to patient outcomes in certain respects. Inviting the broader community to engage with these models, whether through documentaries, social media campaigns, or interactive workshops, can foster a more nuanced understanding of cancer.

AI simulations can also guide better health policies, allowing policymakers and advocates to pursue more inclusive, patient-centric solutions. They can also be valuable in end-of-life care, where understanding the realist mindset can help doctors make difficult conversations about the cessation of aggressive treatments or palliative care options.

Acknowledgements

Howard R. Moskowitz gratefully acknowledges the discussions and support provided by Dr. Sara Sadan and her staff, especially Nicole Musial, at the White Plains Hospital, White Plains, NY.

The authors gratefully acknowledge the ongoing support of Vanessa Marie B. Arcenas, Angela Louise C. Aton, and Isabelle Porat in the preparation of this paper and companion papers in this series.

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