

Review Article

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Developing a Mind-Set Framework for Understanding the Way in which Diversity Contributes to Quality in Peri-Operative Care

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ABSTRACT

This paper delves into the significance of patient diversity as a factor to improving peri-operative care. The focus is on diversity of mind-sets, ways of dealing with patients who have different needs and ways of thinking regarding issues surrounding their operation. We introduce the concept of AI-generated mind-sets and AI-synthesized stages of a journey. We focus on what can be understood by knowing the patient mind-set and the stage in the journey. The objective is to open a new area of understanding patients. The paper introduces two assessment tools, the interview guide and the mind-set questionnaire. The objective is to create a systematic framework which comprehends the needs of individual patients, leading to recommendations for personalized care.

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Abbreviations

AI: Artificial Intelligence

ChatGPT: Chat Generative Pre-Trained Transformer

LLM: Large Language Model

Introduction

The wide range of peri-operative care options influences patient outcomes and satisfaction [1]. Understanding the diverse needs, preferences, and experiences of patients is crucial for providing exceptional, personalized care [2]. How can we understand the different facets of peri-operative care, focusing our attention on the mind of the patient, viz., from the world view of the patient?

The initial strategy to investigate the topic was to ask AI to answer the question shown in the prompt (top, bold). AI returned with the 14 topics. A second iteration generated a few more issues. Table 1 shows the first 14 answers, viz., from the first iteration.

Table 1: Prompt (bold type) and the 14 AI-generated answers about the way people think about the different aspects of an operation

<p>Prompt Given to AI</p> <p>I am interested in the way different people think about an operation. Why are they thinking the way they are thinking. Give me a sense of different topics that people think about before an operation. Make believe that there is an assembly of patients in a hospital a year after their surgery. They have come to talk about what they were thinking in the period before and after their surgery. Classify their topics, and for each topic of concern, give me at least three quotes in a paragraph, and quotes from them at the meeting. At the end of the paragraph give me a slogan which emblemizes their feeling, and another slogan which emblemizes how the medical establishment treats them.</p> <p>Topics Regarding the Operation</p> <ol style="list-style-type: none">1. Pre-surgery anxieties: Patients may be thinking about the risks and potential complications of the operation, as well as the fear of the unknown. Some may be worried about the pain and recovery process, while others may be concerned about the financial burden of the procedure. At the meeting, one patient shares, "I couldn't stop thinking about all the things that could go wrong during surgery." Another patient adds, "I was terrified of not being able to take care of myself afterwards." The slogan for this topic of concern could be "Facing the fear, one step at a time." The slogan emblemizing how the medical establishment treats them could be "Informed consent is key."2. Trust in the medical team: Patients may be thinking about their confidence in the skills and expertise of their surgeons and medical team. Some may be researching the credentials of their healthcare providers, while others may be seeking reassurance from previous patient testimonials. One patient shares, "I had complete trust in my surgeon because of their reputation and experience." Another patient adds, "I felt reassured after meeting with my medical team and discussing the procedure in detail." The slogan for this topic could be "Putting my trust in capable hands." The slogan emblemizing how the medical establishment treats them could be "Patient-centered care is our priority."3. Emotional preparation: Patients may be thinking about their emotional state leading up to the operation, including feelings of fear, anxiety, or even excitement. Some patients may be seeking support from loved ones or mental health professionals to help them cope with their emotions. One patient shares, "I felt a mix of emotions, from fear to anticipation, but ultimately I knew I had to stay strong." Another patient adds, "I leaned on my family and friends for emotional support during this challenging time." The slogan for this topic could be "Embracing the rollercoaster of emotions." The slogan emblemizing how the medical establishment treats them could be "Providing compassionate care, every step of the way."4. Post-operative recovery: Patients may be thinking about the recovery process after their surgery, including the timeline for healing, anticipated pain levels, and potential challenges they may face. Some patients may be preparing their homes for a smooth recovery, while others may be setting realistic expectations for their post-operative journey. One patient shares, "I was worried about how long it would take me to get back on my feet after surgery." Another patient adds, "I made sure to have a support system in place to help me during my recovery period." The slogan for this topic could be "One day at a time, one step closer to healing." The slogan emblemizing how the medical establishment treats them could be "Comprehensive care for a full recovery."5. Financial considerations: Patients may be thinking about the financial implications of their surgery, including insurance coverage, out-of-pocket expenses, and potential costs for follow-up care. Some patients may be exploring payment options or seeking financial assistance to help ease the financial burden of the procedure. One patient shares, "I was stressed about how I would afford the surgery and post-operative care." Another patient adds, "I found resources and assistance programs that helped me navigate the financial aspect of my treatment." The slogan for this topic could be "Navigating the cost of care with financial ease." The slogan emblemizing how the medical establishment treats them could be "Ensuring access to affordable care for all patients."6. Physical preparation: Patients may be thinking about their physical readiness for the surgery, including pre-operative exercises or lifestyle changes recommended by their healthcare providers. Some patients may be focusing on improving their overall health and fitness to optimize their surgical outcomes. One patient shares, "I started a pre-surgery exercise routine to build strength and endurance for the operation." Another patient adds, "I followed dietary guidelines and quit smoking to improve my overall health before surgery." The slogan for this topic could be "Preparing my body for the ultimate test." The slogan emblemizing how the medical establishment treats them could be "Promoting patient wellness for successful outcomes."7. Information overload: Patients may be thinking about the overwhelming amount of information available to them before surgery, including medical jargon, treatment options, and potential risks and benefits. Some patients may be struggling to sift through the information to make informed decisions about their care. One patient shares, "I felt overwhelmed by all the medical terminology and treatment options presented to me." Another patient adds, "I had to ask my healthcare providers to simplify the information for me to make sense of it all." The slogan for this topic could be "Navigating the maze of healthcare information." The slogan emblemizing how the medical establishment treats them could be "Empowering patients with knowledge for informed decisions."8. Support systems: Patients may be thinking about the importance of having a strong support system in place before and after their surgery, including family, friends, caregivers, or support groups. Some patients may be relying on their support network for emotional, physical, or practical assistance during their treatment journey. One patient shares, "I couldn't have gone through this without the love and support of my family and friends." Another patient adds, "I found solace in connecting with other patients going through a similar experience in a support group." The slogan for this topic could be "Strength in numbers, comfort in companionship." The slogan emblemizing how the medical establishment treats them could be "Fostering a community of care and support."9. Alternative treatment options: Patients may be thinking about alternative or complementary treatment options to support their traditional medical care, including herbal remedies, acupuncture, meditation, or yoga. Some patients may be exploring these options to enhance their overall well-being and improve their recovery outcomes. One patient shares, "I found relief from my symptoms through acupuncture sessions leading up to my surgery." Another patient adds, "I practiced mindfulness meditation to ease my anxiety and promote relaxation before the operation." The slogan for this topic could be "Complementing care with holistic healing." The slogan emblemizing how the medical establishment treats them could be "Considering the whole patient for personalized care."10. Communication with healthcare providers: Patients may be thinking about the importance of clear and open communication with their healthcare providers before and after their surgery, including asking questions, expressing concerns, and advocating for their needs. Some patients may be seeking reassurance and understanding from their medical team to build trust and collaboration in their care. One patient shares, "I made sure to ask my surgeon about any concerns or uncertainties I had leading up to the operation." Another patient adds, "I felt heard and supported when my medical team took the time to explain the treatment plan and answer my questions." The slogan for this topic could be "Speaking up for my health, speaking out for my care." The slogan emblemizing how the medical establishment treats them could be "Patient-centered communication for better outcomes."

- be “Listening to patients for personalized treatment.”
11. **Post-surgery lifestyle changes:** Patients may be thinking about the lifestyle changes they may need to make after their surgery, including dietary modifications, exercise routines, or stress management strategies. Some patients may be planning to adopt healthier habits and routines to promote their long-term recovery and well-being. One patient shares, “I knew I had to make changes in my diet and exercise habits to support my recovery and overall health.” Another patient adds, “I incorporated mindfulness practices and relaxation techniques into my daily routine to manage stress and promote healing.” The slogan for this topic could be “Embracing a new chapter of wellness.” The slogan emblemizing how the medical establishment treats them could be “Supporting patients in making positive lifestyle changes for a healthier future.”
12. **Decision-making process:** Patients may be thinking about the decision-making process leading up to their surgery, including weighing the pros and cons of treatment options, consulting with healthcare providers, and considering their personal values and priorities. Some patients may be struggling to make informed decisions about their care, while others may be seeking guidance and support to navigate their choices. One patient shares, “I spent hours researching and consulting with my medical team to make the best decision for my health and well-being.” Another patient adds, “I relied on my values and priorities to guide me in choosing the treatment plan that aligned with my goals.” The slogan for this topic could be “Empowered decision-making for personalized care.” The slogan emblemizing how the medical establishment treats them could be “Partnering with patients in shared decision-making for optimal outcomes.”
13. **Recovery timeline:** Patients may be thinking about the expected timeline for their recovery after surgery, including milestones, setbacks, and challenges they may face along the way. Some patients may be setting realistic expectations for their recovery journey, while others may be eager to get back to their normal activities as soon as possible. One patient shared, “I was surprised by how long it took me to recover fully from the surgery, but I knew I had to be patient and trust the process.” Another patient adds, “I celebrated each small victory and progress I made in my recovery, knowing that it was all part of the journey.” The slogan for this topic could be “Patience and perseverance in the road to recovery.” The slogan emblemizing how the medical establishment treats them could be “Supporting patients through every step of their recovery.”
14. **Mental preparation:** Patients may be thinking about their mental readiness for the surgery, including coping mechanisms for anxiety, stress, or fear leading up to the operation. Some patients may be practicing mindfulness, meditation, or relaxation techniques to calm their nerves and prepare their mind for the challenges ahead. One patient shared, “I focused on staying positive and visualizing a successful outcome to ease my anxiety and fears before surgery.” Another patient adds, “I found solace in mindfulness practices and deep breathing exercises to stay grounded and centered during this challenging time.” The slogan for this topic could be “Mind over matter, strength in resilience.” The slogan emblemizing how the medical establishment treats them

This paper suggests a framework with which to understand diversity in peri-operative care. The approach combines two streams of work, both new to the world of medicine, although not strangers. The first is the notion of a journey with defined steps. The second is the notion of mind-sets, different ways of thinking about the same issues. The level of technology, the concepts, insights, suggested language, and references are based on advanced AI algorithms, inspired by the work of Rappaport and Moskowitz [3].

The idea of a patient journey represents the recognition that when it comes to most situations, the experience is not static. People move through different stages, beginning with a possible dim awareness of the need or wish to do something, and ending with doing that “something” and perhaps even afterwards, when the consequences of one’s actions remain. The notion of journey is becoming a popular topic for researchers, whether that journey represents the simple shopper’s journey of the everyday, or perhaps a less happy journey, mourning, as the person comes to grips with the loss of a loved one or even one’s own mortality [4-7]. Indeed, the notion of journey is so embedded in us, that the German language has a word for a novel which describes the journey of growth of a person from childhood, the so-called Bildungsroman.

It is with the inspiration provided by the notion of “journey,” one well accepted in the medical world, that we turned to LLM, large language models, such as Claude or ChatGPT 3.5, to explore the possibility that AI could synthesize the steps of the journey in a simple manner. The analysis begins with the five steps of the journey, as synthesized by AI, and shown in Table 2. These stages are not “written in stone,” but rather represent AI’s effort to give a structure to a topic. Whether there are more stages than the five shown is not known. What is important to keep in mind is the appeal of the structure. One has a sense of “divide and conquer,” that by knowing the stages it may be possible to deal with the topic on a stage-by-stage basis. By considering the unique challenges and needs at each stage, healthcare professionals may end up tailoring their approach to fit the patient’s experience.

Table 2: The Stages of The Journey for Peri-Operative Care

Journey Number & Stage Name	Brief Description
Stage 1: Pre-operative Preparation	Patient receives information about the surgery and undergoes necessary tests and evaluations
Stage 2: Day of Surgery	Patient arrives at the hospital, undergoes pre-operative procedures, and receives anesthesia
Stage 3: Post-operative Recovery	Patient wakes up from anesthesia and begins the recovery process, managing pain and other symptoms
Stage 4: Discharge and Rehabilitation	Patient is discharged from the hospital and continues recovery at home or in a rehabilitation facility
Stage 5: Long-term Follow-up	Patient attends follow-up appointments and monitors their progress, addressing any ongoing concerns

People Differ-the Organizing Principle of Mind-Sets

We know from everyday life that people differ from each other. Human variation in thinking, ideas, emotions, and so forth is the rule, not the exception. The emerging science of Mind Genomics deals with these differences, not in who the people are but in how the people think about the topics and issues of every day. A Mind Genomics experiment typically reveals 2-4 minds-sets in a topic area, groups of people, or really, groups of ideas held by people which differ dramatically in the patterns and meanings. In other words, these mind-sets have the sound of reality, and are intuitively “the way things are.”

It is crucial to recognize that what some may dismiss as random variations in attitudes and preferences are key indicators of individual needs and motivations. By acknowledging and respecting these differences, healthcare professionals can better address the concerns and expectations of their patients, ultimately leading to improved outcomes and patient satisfaction. The concept of mind-sets in relation to an operation involves the different perspectives and priorities individuals hold when faced with the same journey. Whereas some may prioritize the physical aspects of the operation, such as the success rate and recovery time, others may focus more on the emotional aspects, such as the support system available to them and the impact on their quality of life.

As science delves deeper into understanding the complexities of human behavior, the developing science of Mind Genomics has emerged as a valuable tool in deciphering the unique mind-sets of individuals. This approach has been successfully applied in various fields - such as commerce, law, and services - where personalization and customization are key to meeting the diverse needs of consumers. In the world of medicine, understanding these person-to-person differences can lead to more effective and tailored treatment plans.

Through the use of discoveries prompted by Mind Genomics, medical professionals can identify the specific mind-sets of patients and tailor their approach accordingly. This personalized approach can enhance communication, build trust, and ensure that the patient’s unique needs and preferences are taken into account throughout the treatment process. In other words, these mind-sets may end up allowing the medical world to tailor the peri-operative journey for each mind-set.

For this project, we requested the LLM (Claude) to give us different mind-sets, these mind-sets relevant to what is important during the peri-operative journey. One of the benefits of AI, especially the LLMs (large language models), such as Claude or ChatGPT 3.5, is the ability to have these LLMs provide additional information relevant for the mind-set it synthesizes, whether additional information comes strictly from the LLM itself without the human touch, or use mind-sets provided by the human researcher[8,9].

When we instruct AI that there are mind-sets but do not tell AI what the mind-sets are, we end up with information in Table 3. For this example, we did not specify the number of mind-sets, but simply instructed AI to describe these mind-sets, by name and then by a brief description. Experience with this approach suggests that it can become a teaching moment. If we were to run the prompt again, we might end up with a different array of mind-sets. Although not done here, one might stop at this point, and run the prompt several times to assemble a large, presumably quite exhaustive list.

Table 3: Mind-Sets for Peri-Operative Care Synthesized by AI

Mind-Set Number & Name	Brief Description
Mind-Set 1: Culturally Sensitive Care Seeker	Believes peri-operative care should be tailored to their cultural background and traditions
Mind-Set 2: Anxiety-Prone Worrier	Experiences high levels of anxiety about the surgery and potential complications
Mind-Set 3: Stoic Endurer	Downplays pain and discomfort, preferring to tough it out without complaint
Mind-Set 4: Engaged Partner	Actively participates in decision-making and seeks to collaborate with the healthcare team
Mind-Set 5: Spirituality-Focused Coper	Relies on faith and spiritual practices to cope with the challenges of peri-operative care

The mind-sets differ in their psychological make-up (see Table 4). Each mind-set represents a distinct perspective, coping mechanism, or set of needs that healthcare professionals should consider when providing personalized care.

Table 4: Psychological “Make-Up” of the Five Mind-Sets

Mind-Set Number & Name	Attitudes	Emotional Responses	Behaviors	Non-verbal Cues
Mind-Set 1: Culturally Sensitive Care Seeker	Values cultural traditions, Expects personalized care	Appreciative, Frustrated if needs not met	Shares cultural preferences, Seeks accommodations	Relaxed when understood, Tense when ignored
Mind-Set 2: Anxiety-Prone Worrier	Fears complications, Doubts coping ability	Anxious, Overwhelmed	Seeks reassurance, Expresses concerns	Fidgeting, Nervous gestures
Mind-Set 3: Stoic Endurer	Believes in self-reliance, Minimizes pain	Proud, Irritable if pushed	Declines help, Pushes through discomfort	Stiff posture, Clenched jaw
Mind-Set 4: Engaged Partner	Values collaboration, Seeks information	Curious, Empowered	Asks questions, Participates in decisions	Attentive, Nods in agreement
Mind-Set 5: Spirituality-Focused Coper	Finds strength in faith, Sees meaning in suffering	Peaceful, Hopeful	Prays, Seeks spiritual support	Serene expression, Holds religious items

A consequence of the differences among the mind-sets in terms of psychological needs is the opportunity to provide different wording in the interaction with the mind-set, wording appropriate for the mind-set. Table 5 shows the AI-suggested language to use with each mind-set for each stage in the peri-operative journey.

Table 5: Suggested Language to Use for Each Mind-Set, At Each Stage of The Peri-Operative Journey

Journey Number & Stage	Mind-Set 1: Culturally Sensitive Care Seeker	Mind-Set 2: Anxiety-Prone Worrier	Mind-Set 3: Stoic Endurer	Mind-Set 4: Engaged Partner	Mind-Set 5: Spirituality-Focused Coper
Stage 1: Pre-operative Preparation	“We respect your traditions and will tailor our approach to your needs.”	“It’s normal to feel anxious. We’re here to support you every step of the way.”	“Your resilience is admirable. Let us know if you need any assistance.”	“We value your input and want to collaborate with you throughout this process.”	“Your faith can be a great source of strength during this time.”
Stage 2: Day of Surgery	“We’ve made the arrangements you requested to ensure your comfort and well-being.”	“Take slow, deep breaths. You’re in good hands, and we’ll be with you the whole time.”	“We understand you prefer to manage on your own, but please don’t hesitate to ask for help if needed.”	“We’ll keep you informed about each step and answer any questions you may have.”	“We respect your spiritual practices and will provide any accommodations you need.”
Stage 3: Post-operative Recovery	“As you recover, let us know how we can best support your cultural preferences and needs.”	“It’s okay to feel a range of emotions. We’re here to listen and help you through this.”	“We admire your strength but remember that it’s okay to accept help and support during recovery.”	“Your insights and feedback are valuable as we work together to manage your recovery.”	“Lean on your faith and spiritual practices to find peace and healing during this time.”
Stage 4: Discharge and Rehabilitation	“We’ll provide resources and recommendations that align with your cultural background and traditions.”	“Remember to take things one day at a time. Reach out if you need any guidance or reassurance.”	“Trust in your resilience, but also be open to accepting assistance when needed.”	“Let’s work together to develop a rehabilitation plan that meets your unique needs and goals.”	“Continue to draw strength from your faith as you navigate the challenges of recovery.”
Stage 5: Long-term Follow-up	“We’ll continue to provide culturally sensitive care and support throughout your follow-up journey.”	“Healing is a process. Be patient with yourself and reach out if you have any concerns or worries.”	“Celebrate your progress and the strength you’ve shown but remember that it’s okay to ask for ongoing support.”	“Your active participation in your follow-up care is key to long-term success. We’re here to partner with you.”	“May your faith continue to guide and comfort you as you move forward in your health journey.”

Tools to Understand the Mind-Sets and the Peri-Operative Journey

An ongoing theme in these AI-oriented studies is how to better understand the journey, and then how to assign a person to a mind-set for this specific journey. We introduce here the two questionnaires, the first showing us how to discuss and understand these different mind-sets and the second how to assign a person to a mind-set. Once again, it is important to keep in mind that these are all AI-generated and can be considered developmental in the very early stages of consideration.

Table 6 shows the interview guide. The underlying rationale for the interview guide is that it provides a way for the researcher to begin discussions with patients, and in turn from the patients’ reactions, sense the mind-sets to which they belong.

Table 6: Interview Guide to Understand the Peri-Operative Journey Through Qualitative Research

Mind-Set Number & Name	Sample Question	Sample Response	Keywords	Non-Verbal Cues
Mind-Set 1: Culturally Sensitive Care Seeker	How important is it for you that your cultural background is considered during your peri-operative care?	It’s very important to me. I want to feel understood and respected.	“cultural background,” “understood,” “respected”	Relaxed posture, direct eye contact
Mind-Set 2: Anxiety-Prone Worrier	What worries you the most about your upcoming surgery and recovery?	I’m afraid of the pain and potential complications. I don’t know if I can handle it.	“afraid,” “pain,” “complications,” “handle”	Fidgeting, averted gaze
Mind-Set 3: Stoic Endurer	How do you typically cope with pain or discomfort?	I just grit my teeth and bear it. I don’t like to complain or ask for help.	“grit,” “bear it,” “don’t complain,” “ask for help”	Stiff posture, clenched jaw

Mind-Set 4: Engaged Partner	In what ways would you like to be involved in your peri-operative care decisions?	I want to understand my options and have a say in what happens. I believe in working together with my doctors.	“understand,” “options,” “have a say,” “working together”	Leaning forward, nodding
Mind-Set 5: Spirituality-Focused Coper	How does your faith or spirituality help you cope with health challenges?	My faith gives me strength and peace. I trust that God has a plan for me.	“faith,” “strength,” “peace,” “trust,” “God”	Serene expression, touching religious symbol

The questionnaire in Table 7 requires the patient to rank pairs of statements in terms of “Most Like Me” to “Least Like Me,” using a ranking scale from 1 to 5. The rank order gives a sense of the likely mind-set to which a person belongs.

Table 7: Mind-set questionnaire for peri-operative care

Mind-Set	Statements	Rank (1-5)
Mind-Set 1: Culturally Sensitive Care Seeker	I believe my cultural background should be taken into account during peri-operative care.	
	It’s important that healthcare professionals respect my traditions and customs.	
Mind-Set 2: Anxiety-Prone Worrier	I often feel anxious about the potential risks and complications of surgery.	
	I worry that I won’t be able to cope with the challenges of peri-operative care.	
Mind-Set 3: Stoic Endurer	I prefer to tough it out and not complain about pain or discomfort.	
	I believe in being self-reliant and not asking for help unless absolutely necessary.	
Mind-Set 4: Engaged Partner	I want to be actively involved in making decisions about my peri-operative care.	
	I believe in collaborating with healthcare professionals to achieve the best outcomes.	
Mind-Set 5: Spirituality-Focused Coper	My faith plays a significant role in how I cope with the challenges of peri-operative care.	
	I find strength and comfort in my spiritual practices during difficult times.	

Synthesizing how the Mind-Set “Thinks” and “Feels” During the Journey

A key benefit of using AI is the potential to have AI synthesize what a person is thinking. These may or may not be correct syntheses, but they produce an interesting story and insights as the next set of tables will show. The tables present the inner thoughts and concerns for the five stages involved in the journey, respectively preoperative preparation (Table 8A), day of surgery (Table 8B), postoperative recovery (Table 8C), discharge and rehabilitation (Table 8D), and finally long-term follow-up (Table 8E). Whether or not these are precisely correct is less important than the fact that these approaches to mind-sets can be enriched by asking AI to tell more. It is almost as if AI is now reporting as a psychologist giving a work-up of a person after interviewing that person.

Table 8A: AI-Synthesized Thoughts of Mind-Sets During Pre-Operative Preparation

<p>PRE-OPERATIVE PREPARATION</p> <p>Mind-Set 1 (Culturally Sensitive Care Seeker): A Culturally Sensitive Care Seeker may hope that their healthcare team will take the time to understand and respect their cultural background and traditions. They may worry that their unique needs and preferences will be overlooked or dismissed. They might think about how their family and community would expect them to approach this medical situation and whether they will be able to adhere to cultural norms and practices during their hospital stay.</p> <p>Mind-Set 2 (Anxiety-Prone Worrier): An Anxiety-Prone Worrier may experience intense fears about the upcoming surgery, focusing on potential complications, pain, and the uncertainty of the outcome. They might worry about how their family will cope if something goes wrong and may feel overwhelmed by the amount of information they need to process and decisions they need to make. They may seek constant reassurance from healthcare providers and loved ones, but still struggle to find comfort and peace of mind.</p> <p>Mind-Set 3 (Stoic Endurer): A Stoic Endurer may approach the pre-operative preparation with a sense of determination and self-reliance. They might downplay their own concerns and fears, believing that expressing vulnerability is a sign of weakness. They may focus on maintaining a strong exterior for the sake of their loved ones, even if internally they are grappling with the uncertainty and potential risks of the surgery. They might resist asking for help or support, preferring to handle things on their own.</p> <p>Mind-Set 4 (Engaged Partner): An Engaged Partner may approach the pre-operative preparation with a proactive and collaborative mind-set. They might extensively research their condition and treatment options, coming prepared with questions and ideas to discuss with their healthcare team. They may feel empowered by being involved in the decision-making process and advocate for their preferences and values. They might also involve their family and support system in the preparation process, delegating tasks and responsibilities to ensure a smooth and well-coordinated experience.</p> <p>Mind-Set 5 (Spirituality-Focused Coper): A Spirituality-Focused Coper may lean on their faith and spiritual practices to find strength, comfort, and peace during the pre-operative preparation. They might engage in prayer, meditation, or other rituals to calm their mind and connect with a higher power. They may seek guidance and support from religious or spiritual leaders and find solace in the belief that their journey is part of a greater plan. They might also reflect on the deeper meaning and purpose of their experience, viewing it as an opportunity for growth, healing, and transformation.</p>

Table 8B: AI-Synthesized Thoughts of Mind-Sets During Day of Surgery

<p>DAY OF SURGERY</p> <p>Mind-Set 1 (Culturally Sensitive Care Seeker): On the day of surgery, a Culturally Sensitive Care Seeker may feel anxious about whether their healthcare team will follow through on any previously discussed accommodations or modifications based on their cultural needs. They might worry about how their family will cope with the stress of waiting during the surgery and whether they will be able to communicate effectively with their loved ones. They may find comfort in culturally significant objects, prayers, or rituals, and hope that their healthcare team will be respectful and supportive of these practices.</p> <p>Mind-Set 2 (Anxiety-Prone Worrier): An Anxiety-Prone Worrier may experience peak levels of anxiety on the day of surgery, with thoughts racing about all the potential risks and complications. They might feel overwhelmed by the unfamiliar hospital environment and the idea of surrendering control to the surgical team. They may seek constant updates and reassurance from healthcare providers and family members, but still struggle to calm their nerves. They might fixate on worst-case scenarios and worry about the impact on their loved ones if something were to go wrong.</p> <p>Mind-Set 3 (Stoic Endurer): A Stoic Endurer may approach the day of surgery with a sense of resigned determination, focusing on getting through the experience without showing any signs of weakness or vulnerability. They might downplay their own fears and discomfort, putting on a brave face for their family and healthcare team. They may resist accepting offers of comfort or support, believing that they need to tough it out on their own. Internally, they might grapple with the loss of control and the uncertainty of the outcome but strive to maintain a stoic exterior.</p> <p>Mind-Set 4 (Engaged Partner): An Engaged Partner may approach the day of surgery with a mix of nervous anticipation and confident preparedness. They might arrive at the hospital armed with questions, notes, and a well-coordinated support system. They may advocate for their needs and preferences, ensuring that everyone is on the same page regarding their care plan. They might seek out information and updates from their healthcare team, taking an active role in the process. While they may still experience some anxiety, they find comfort in the knowledge that they have done everything in their power to set themselves up for a successful outcome.</p> <p>Mind-Set 5 (Spirituality-Focused Coper): A Spirituality-Focused Coper may approach the day of surgery with a sense of surrendering to a higher power and finding peace in the belief that everything happens for a reason. They might engage in prayer, meditation, or other spiritual practices to calm their mind and connect with a sense of purpose. They may seek out the support and guidance of religious or spiritual leaders, finding comfort in their wisdom and presence. They might view the surgery as a sacred journey of healing and transformation, trusting that they will emerge stronger and more enlightened on the other side.</p>

Table 8C: AI-Synthesized Thoughts of Mind-Sets During Post-Operative Recovery

<p>POST-OPERATIVE RECOVERY</p> <p>Mind-Set 1 (Culturally Sensitive Care Seeker): During post-operative recovery, a Culturally Sensitive Care Seeker may hope that their healthcare team continues to respect and accommodate their cultural needs and preferences. They might worry about how their recovery will impact their ability to fulfill cultural roles and obligations and whether they will be able to access culturally appropriate resources and support services. They may find comfort in the presence of family members and the incorporation of cultural practices into their recovery plan.</p> <p>Mind-Set 2 (Anxiety-Prone Worrier): An Anxiety-Prone Worrier may experience ongoing anxiety and worry during post-operative recovery, fixating on any new symptoms, complications, or setbacks. They might constantly seek reassurance from healthcare providers and family members, fearing that something is wrong or that their recovery is not progressing as it should. They may feel overwhelmed by the challenges of managing pain, mobility, and self-care, and worry about the long-term impact on their quality of life. They might struggle to relax and trust in the recovery process, always anticipating the worst.</p> <p>Mind-Set 3 (Stoic Endurer): A Stoic Endurer may approach post-operative recovery with a determined mind-set, pushing themselves to recover quickly and independently. They might downplay their pain and discomfort, refusing to ask for help or accept offers of support. They may feel frustrated by any limitations or setbacks, seeing them as signs of weakness or failure. Internally, they might worry about the impact of their recovery on their family and work life but strive to maintain a strong and self-reliant exterior. They might resist following recovery guidelines or attending follow-up appointments, believing they can handle things on their own.</p> <p>Mind-Set 4 (Engaged Partner): An Engaged Partner may approach post-operative recovery with a proactive and collaborative mind-set, working closely with their healthcare team to develop and implement a comprehensive recovery plan. They might take an active role in managing their pain, mobility, and self-care, keeping detailed records and communicating any concerns or questions to their providers. They may seek out resources and support services to help them navigate the challenges of recovery and maintain a positive outlook. They might involve their family and support system in the recovery process, delegating tasks and responsibilities to ensure a smooth and well-coordinated experience.</p> <p>Mind-Set 5 (Spirituality-Focused Coper): A Spirituality-Focused Coper may approach post-operative recovery as a sacred journey of healing and transformation, finding meaning and purpose in the challenges and opportunities for growth. They might engage in prayer, meditation, or other spiritual practices to manage pain, promote healing, and cultivate a positive mind-set. They may seek out the support and guidance of religious or spiritual communities, finding comfort and inspiration in their shared beliefs and practices. They might view their recovery as a testament to the power of faith and the resilience of the human spirit, trusting in the journey and embracing the lessons and blessings along the way.</p>

Table 8D: AI-Synthesized thoughts of mind-sets during Discharge and Rehabilitation

<p>DISCHARGE AND REHABILITATION</p> <p>Mind-Set 1 (Culturally Sensitive Care Seeker): During discharge and rehabilitation, a Culturally Sensitive Care Seeker may hope that their transition to home or a rehabilitation facility is smooth and culturally appropriate. They might worry about how they will manage their recovery while also fulfilling cultural roles and obligations and whether they will have access to culturally sensitive resources and support services. They may find comfort in the involvement of family members and the incorporation of cultural practices into their ongoing care plan.</p> <p>Mind-Set 2 (Anxiety-Prone Worrier): An Anxiety-Prone Worrier may experience heightened anxiety and worry during discharge and rehabilitation, fearing that they are not ready to leave the hospital or that they will not be able to manage their recovery on their own. They might obsess over potential complications, setbacks, or long-term impacts, seeking constant reassurance from healthcare providers and family members. They may feel overwhelmed by the challenges of adapting to new routines, managing medications, and attending follow-up appointments, worrying that they are not doing enough or that something will go wrong.</p> <p>Mind-Set 3 (Stoic Endurer): A Stoic Endurer may approach discharge and rehabilitation with a stubborn determination to recover quickly and independently, resisting offers of help or support. They might push themselves to return to normal activities and responsibilities, even if it means ignoring pain, discomfort, or other warning signs. They may feel frustrated by any ongoing limitations or setbacks, seeing them as signs of weakness or failure. Internally, they might worry about the burden their recovery places on their family and work-life but strive to maintain a strong and self-reliant exterior.</p> <p>Mind-Set 4 (Engaged Partner): An Engaged Partner may approach discharge and rehabilitation with a sense of empowerment and collaboration, working closely with their healthcare team and support system to develop and implement a comprehensive care plan. They might take an active role in managing their medications, therapy, and follow-up appointments, keeping detailed records and communicating any concerns or questions to their providers. They may seek out resources and support services to help them adapt to new routines and overcome any challenges, maintaining a positive and proactive outlook throughout the process.</p> <p>Mind-Set 5 (Spirituality-Focused Coper): A Spirituality-Focused Coper may approach discharge and rehabilitation as a continuation of their sacred journey of healing and transformation, finding meaning and purpose in the ongoing challenges and opportunities for growth. They might engage in prayer, meditation, or other spiritual practices to manage pain, promote healing, and cultivate a positive mind-set. They may seek out the support and guidance of religious or spiritual communities, finding comfort and inspiration in their shared beliefs and practices. They might view their ongoing recovery as a testament to the power of faith and the resilience of the human spirit, trusting in the journey and embracing the lessons and blessings along the way.</p>

Table 8E: AI-Synthesized thoughts of mind-sets during Long Term Follow-Up

<p>LONG-TERM FOLLOW-UP</p> <p>Mind-Set 1 (Culturally Sensitive Care Seeker): During long-term follow-up, a Culturally Sensitive Care Seeker may hope that their healthcare team continues to provide culturally competent care and support. They might worry about the long-term impact of their surgery on their ability to fulfill cultural roles and obligations and whether they will have ongoing access to culturally appropriate resources and services. They may find comfort in the involvement of family members and the incorporation of cultural practices into their long-term care plan, hoping to maintain a sense of connection to their heritage and community.</p> <p>Mind-Set 2 (Anxiety-Prone Worrier): An Anxiety-Prone Worrier may experience persistent anxiety and worry during long-term follow-up, fixating on any residual symptoms, potential complications, or future health risks. They might seek constant reassurance from healthcare providers and family members, fearing that something is still wrong or that their recovery is not complete. They may feel overwhelmed by the challenges of maintaining a healthy lifestyle, attending regular check-ups, and coping with any long-term side effects, worrying that they will never fully recover or that they are at risk for future health problems.</p> <p>Mind-Set 3 (Stoic Endurer): A Stoic Endurer may approach long-term follow-up with a sense of determination to move on from the surgery and put the experience behind them. They might downplay any ongoing symptoms or concerns, refusing to dwell on the past or seek further support. They may feel frustrated by any lasting limitations or changes to their lifestyle, seeing them as signs of weakness or failure. Internally, they might worry about the long-term impact on their family and work life but strive to maintain a strong and independent exterior, pushing themselves to return to normal as quickly as possible.</p> <p>Mind-Set 4 (Engaged Partner): An Engaged Partner may approach long-term follow-up with a sense of ongoing collaboration and self-advocacy, working closely with their healthcare team to monitor their progress and address any concerns. They might take an active role in maintaining a healthy lifestyle, attending regular check-ups, and communicating any questions or issues to their providers. They may seek out resources and support services to help them adapt to any long-term changes or challenges, maintaining a positive and proactive outlook throughout the process. They might also become advocates for other patients, sharing their experiences and insights to help improve the overall quality of care.</p> <p>Mind-Set 5 (Spirituality-Focused Coper): A Spirituality-Focused Coper may approach long-term follow-up as a reflection on their journey of healing and transformation, finding meaning and purpose in the ongoing challenges and opportunities for growth. They might continue to engage in prayer, meditation, or other spiritual practices to maintain a positive mind-set, promote ongoing healing, and cultivate a sense of gratitude and acceptance. They may seek out opportunities to share their story and inspire others, finding comfort and purpose in the connections and contributions they make. They might view their long-term recovery as a testament to the power of faith and the resilience of the human spirit, embracing the lessons and blessings of the journey and trusting in the path ahead.</p>

Extending the Power of Mind-Sets to Social “Touching” the World of Medicine

Our final synthesis deals with issues that one might say are related to a popular issue today, “diversity.” Table 9 shows what AI generates when asked to provide information relevant to “diversity” as it related to one’s operation. The objective was to extend the effort of synthesizing mind-sets, so that we might see how these mind-sets deal with today’s “hot topic,” diversity. The output of AI shown in Table 9 represents in some way a “tour de force,” as we see the ability of AI to move out of a well-defined topic area, the issues regarding one’s operation, and into a topic which makes intuitive sense but has little or no established scientific evidence, viz., the “diversity in peri-operative care.” In our daily lives, we simply never think about diversity conjoined with peri-operative care.

Table 9: Mind-Set positions on Diversity in Peri-Operative Care

Mind-set Number & Name	Position	Key Arguments	Unique Perspective	Potential Impact	Persuasiveness	Motivating Words
Mind-Set 1: Culturally Sensitive Care Seeker	Peri-operative care should be tailored to patients’ cultural backgrounds and traditions.	Cultural competence improves patient satisfaction and outcomes.	Emphasizes the importance of cultural humility and respect.	Encourages healthcare professionals to seek cultural competency training.	Highly persuasive, as it appeals to the ethical imperative of providing equitable care.	“Cultural understanding,” “respect,” “inclusivity”
Mind-Set 2: Anxiety-Prone Worrier	Peri-operative care should prioritize addressing patients’ anxiety and worries, regardless of background.	Anxiety can negatively impact recovery and overall well-being.	Focuses on the emotional needs of patients, which can be overlooked.	Promotes the development of targeted interventions for anxiety reduction.	Moderately persuasive, as it highlights a common challenge faced by many patients.	“Emotional support,” “reassurance,” “empathy”
Mind-Set 3: Stoic Endurer	Peri-operative care should respect patients’ coping mechanisms and preferences, even if they differ from the norm.	Patients have the right to make decisions about their own care.	Challenges assumptions about how patients should behave or cope.	Encourages healthcare professionals to adapt their approach based on individual needs.	Less persuasive, as it may be seen as enabling potentially harmful coping strategies.	“Autonomy,” “resilience,” “non-judgment”
Mind-Set 4: Engaged Partner	Peri-operative care should actively involve patients from diverse backgrounds in decision-making.	Collaborative decision-making leads to better adherence and outcomes.	Emphasizes the value of patient input and expertise, regardless of background.	Promotes the development of shared decision-making tools and training.	Highly persuasive, as it aligns with the principles of patient-centered care.	“Partnership,” “empowerment,” “collaboration”
Mind-Set 5: Spirituality-Focused Coper	Peri-operative care should acknowledge and support patients’ spiritual needs and practices.	Spirituality can be a powerful coping mechanism and source of strength.	Highlights the role of faith and spirituality in health and well-being.	Encourages healthcare professionals to inquire about and accommodate spiritual needs.	Moderately persuasive, as it may resonate with those who value spirituality but alienate others.	“Spiritual sensitivity,” “holistic care,” “faith-based support”

Discussion and Conclusions

The mind-set framework has significant implications for managing issues in peri-operative care. By understanding the unique attitudes, behaviors, and needs of patients with different mind-sets, healthcare professionals can tailor their approach to provide more personalized and effective care. Each mind-set brings a unique perspective, expectation, and language to the conversation, highlighting the complexity of the issue. Healthcare leaders can use these insights to guide more effective communication and advocacy efforts, ultimately promoting more inclusive and equitable care practices.

However, it is essential to acknowledge the limitations of the AI-generated mind-set framework. As the mind-sets and journey stages are based on the AI’s training data rather than empirical research, they require validation through real-world studies. Additionally, the framework may not capture all possible mind-sets or experiences related to diversity in peri-operative care.

The AI-generated mind-set framework has several limitations that should be considered.

1. The mind-sets and journey stages are based on the AI’s training data rather than empirical research, which means they may not fully capture the complexity and nuances of real-world patient experiences.
2. The framework requires further validation through patient surveys, interviews, and other research methods to ensure its accuracy and generalizability.
3. The AI’s capabilities may be limited in terms of identifying and articulating all possible mind-sets and experiences related to diversity in peri-operative care.

The mind-set framework offers valuable insights into understanding and addressing diversity in peri-operative care. By recognizing the unique needs and perspectives of patients with different mind-sets, healthcare professionals can provide more personalized and culturally sensitive care. The assessment tools and social issues analysis presented in this report serve as a starting point for further exploration and validation of the mind-set approach. Ultimately, embracing diversity and tailoring care to individual needs can lead to improved patient satisfaction, adherence, and outcomes in peri-operative care.

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