



Developing a Mind-Set Framework for When a Patient Is Encouraged to Undergo Bariatric Surgery Before Spinal Surgery: The Contribution of Mind Genomics Coupled With AI

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Abstract

This paper explores the use of AI to analyze the mind-sets of patients who are advised to undergo bariatric surgery prior to spinal surgery. By understanding the unique mind-sets, healthcare providers can craft tailored care strategies to effectively assist patients during their treatment process. The report presents a conceptual framework of patient mind-sets and journey stages, accompanied by assessment tools and communication strategies customized for each mind-set. This paper explores the implications of utilizing the mind-set approach to enhance patient outcomes and satisfaction, while also addressing the limitations of AI-generated content.

Keywords: Assessment Tools; Bariatric Surgery; Communication Strategies; Journey Stages; Obesity; Patient Mind-Sets; Patient Outcomes; Patient Satisfaction; Personalized Care, Spinal Surgery

Abbreviations

AI: Artificial Intelligence; BSPMI: Bariatric Surgery Patient Mind-Set Interview; BSPMQ: Bariatric Surgery Patient Mind-Set Questionnaire; ChatGPT: Chat Generative Pre-Trained Transformer; LLM: Large Language Model

Introduction

Patients who are encouraged to undergo bariatric surgery before spinal surgery face a complex and challenging treatment journey. Obesity is a significant risk factor for complications and poor outcomes in spinal surgery. Bariatric surgery has been shown to improve surgical outcomes and reduce complications in obese patients [1-3]. The decision to undergo bariatric surgery before spinal surgery can be difficult for patients, however, because it involves potential risks as well as significant lifestyle changes [4,5].

Understanding the mind-sets of patients who are facing this treatment decision is crucial for personalized care and support. By identifying the distinct attitudes, emotions, and behaviors associated with each mind-set, healthcare providers can tailor their communication and treatment strategies to better meet the needs of individual patients [6-9].

With the help of AI, specifically LLMs (large language models), this paper creates a conceptual framework of patient mind-sets for prospective patients, and then synthesizes the steps of their "journey" from first recognizing the need for surgery until the surgery has been completed. The paper further presents AI-generated test tools for understanding the mind of the patient, and communication strategies considering mind-sets. The paper is based on the ongoing work of authors Rappaport and Moskowitz, specifically their ef-

forts to use AI as a tool for medical education about understanding the “mind of the patient.” The AI-generated mind-sets and journey stages are intended to serve as a starting point for future efforts. The mind-sets and journey stages presented in this report are conceptual and require empirical validation through clinical studies. The report is intended to demonstrate the potential applications of the mind-set approach for improving patient care and outcomes, and to inspire further research in this area [10-12].

Method

The framework presented in this report is based on previous efforts to understand patient mind-sets. The original work was done empirically, using the methods of Mind Genomics, in which human respondents evaluated systematically created concepts or vignettes, these vignettes comprising messages. The pattern of responses to the vignettes revealed which messages were working. Clustering the human respondents revealed the mind-sets [13-15].

For this study, the mind-sets were not derived from external sources such as clinical studies, but rather generated by the AI based on its training data. The mind-sets were developed by the AI analyzing and synthesizing its trained dataset to identify themes, attitudes, emotions, and behaviors for different patient segments.

Each mind-set attempts to capture distinct patient experiences related to the experience of being encouraged to undergo bariatric surgery prior to spinal surgery. The mind-sets were designed to be mutually exclusive and reasonably covering the range of patient experiences within this context. The journey stages represent a conceptual model of possible patient stages based on the AI training data, rather than a systematic review of clinical literature. The journey stages are intended to capture the key milestones and transitions that patients may experience throughout their treatment journey.

Results

The AI-generated framework for mind-sets consists of five journey stages and four distinct mind-sets. The journey stages represent the key milestones and transitions that patients may experience, from initial diagnosis and treatment recommendation to post-surgery recovery and long-term weight management (see Tables 1 and 2).

Table 1: Journey Stages for Patients Encouraged to Undergo Bariatric Surgery.

Journey Stage	Description
Stage 1	Diagnosis and Treatment Recommendation
Stage 2	Preparation and Education
Stage 3	Bariatric Surgery
Stage 4	Recovery and Rehabilitation
Stage 5	Long-term Weight Management

Table 2: Journey Stage Descriptions and Durations for Patients Encouraged to Undergo Bariatric Surgery.

Stage	Description	Typical Duration
1. Diagnosis and Treatment Recommendation	Patient learns about the need for bariatric surgery before spinal surgery	1-2 weeks
2. Preparation and Education	Patient undergoes evaluations, attends informational sessions, and makes necessary lifestyle changes	3-6 months
3. Bariatric Surgery	Patient undergoes bariatric surgery procedure	1-2 days
4. Recovery and Rehabilitation	Patient recovers from surgery and adapts to new diet and exercise routines	6-12 months
5. Long-term Weight Management	Patient maintains weight loss and healthy lifestyle changes	Ongoing

In turn, the mind-sets capture the attitudes, emotions, and behaviors that patients may exhibit, ranging from skepticism and reluctance to enthusiasm and determination (see Table 3).

Table 4 shows a description of each synthesized mind-set.

In turn, by understanding the attitudes, emotions, and behaviors associated with each mind-set, along with milestones and transitions associated with each journey stage, healthcare professionals may find it less challenging to develop personalized care strategies and support systems (see Table 5).

Table 3: Mind-Sets for Patients Encouraged to Undergo Bariatric Surgery

Mind-Set Number	Mind-Set Name	Brief Description
Mind-Set 1	Skeptical Sideliner	Doubtful about the necessity and effectiveness of bariatric surgery; resistant to change
Mind-Set 2	Concerned Contemplator	Worried about the risks and challenges of bariatric surgery; carefully considering options
Mind-Set 3	Determined Doer	Committed to undergoing bariatric surgery to improve spinal surgery outcomes; ready to make necessary changes
Mind-Set 4	Enthusiastic Embracer	Excited about the potential benefits of bariatric surgery; eager to start the process

Table 4: Mind-Set Profiles for Patients Encouraged to Undergo Bariatric Surgery.

Mind-Set	Attitudes	Emotional Responses	Behaviors	Non-Verbal Cues
1. Skeptical Sideliner	Doubtful, resistant, skeptical	Frustration, anxiety, helplessness	Avoidance, procrastination, argumentative	Crossed arms, furrowed brow, limited eye contact
2. Concerned Contemplator	Cautious, apprehensive, uncertain	Worry, fear, confusion	Information-seeking, weighing options, seeking reassurance	Fidgeting, nervous gestures, pensive expression
3. Determined Doer	Committed, focused, proactive	Determination, hope, anticipation	Planning, preparation, adherence to recommendations	Confident posture, direct eye contact, nodding
4. Enthusiastic Embracer	Optimistic, excited, motivated	Enthusiasm, joy, impatience	Eager to start, sharing experiences, encouraging others	Smiling, energetic gestures, leaning forward

Table 5: Journey Stage and Mind-Set Mapping with AI-Suggested Words to Help Bariatric Surgery Patients.

Journey Stage	Skeptical Sideliner	Concerned Contemplator	Determined Doer	Enthusiastic Embracer
1. Diagnosis and Treatment Recommendation	“Explore,” “Options,” “Personalized”	“Understand,” “Support,” “Guidance”	“Empower,” “Plan,” “Commit”	“Opportunity,” “Improve,” “Transform”
2. Preparation and Education	“Inform,” “Reassure,” “Gradual”	“Prepare,” “Manage,” “Adapt”	“Equip,” “Strengthen,” “Optimize”	“Encourage,” “Motivate,” “Energize”
3. Bariatric Surgery	“Comfort,” “Care,” “Safety”	“Trust,” “Expertise,” “Precision”	“Achieve,” “Milestone,” “Success”	“Celebrate,” “Rejoice,” “Gratitude”
4. Recovery and Rehabilitation	“Heal,” “Adjust,” “Progress”	“Cope,” “Adapt,” “Persevere”	“Overcome,” “Thrive,” “Resilience”	“Embrace,” “Enjoy,” “Renew”
5. Long-term Weight Management	“Maintain,” “Balance,” “Sustain”	“Monitor,” “Prevent,” “Consistency”	“Excel,” “Inspire,” “Life-long”	“Flourish,” “Vitality,” “Fulfillment”

Tools and strategies

To assess patients’ mind-sets related to undergoing bariatric surgery before spinal surgery, the paper generated two tools: the Bariatric Surgery Patient Mind-Set Questionnaire (BSPMQ) and the Bariatric Surgery Patient Mind-Set Interview (BSPMI), respectively.

The BSPMQ (Table 6) is a self-report questionnaire designed to identify a patient’s dominant mind-set. Patients read pairs of

mind-set statements. The pairs provide a stronger communication of the nature of the mind-set than would a single statement. The patient rank-orders the four pairs from “Most Like Me” to “Least Like Me.” The rankings are then used to determine the patient’s dominant mind-set.

The BSPMI (Table 7) is a semi-structured interview designed to provide deeper insights into a patient’s mind-set. Healthcare

Table 6: Bariatric Surgery Patient Mind-Set Questionnaire (BSPMQ) Format.

Mind-Set (not shown to the patient)	Statement 1	Statement 2	Rank(1-4)
1. Skeptical Sidelineer	I'm not sure if bariatric surgery is really necessary for me.	I doubt that bariatric surgery will be effective in improving my spinal surgery outcomes.	
2. Concerned Contemplator	I'm worried about the risks and complications of bariatric surgery.	I need more information to make an informed decision about bariatric surgery.	
3. Determined Doer	I am committed to undergoing bariatric surgery to improve my spinal surgery outcomes.	I am ready to make the necessary lifestyle changes to ensure the success of my bariatric surgery.	
4. Enthusiastic Embracer	I am excited about the potential benefits of bariatric surgery for my health and quality of life.	I can't wait to start the process of preparing for bariatric surgery.	

providers ask sample questions for each mind-set and record the patient's responses, keywords, and non-verbal cues. The BSPMI

enables a more in-depth exploration of the patient's attitudes, emotions, and behaviors related to undergoing bariatric surgery before spinal surgery.

Table 7: Bariatric Surgery Patient Mind-Set Interview (BSPMI) Format.

Mind-Set	Sample Question	Sample Response	Keywords	Non-Verbal Cues
1. Skeptical Sidelineer	What concerns do you have about undergoing bariatric surgery before spinal surgery?	I'm not convinced that bariatric surgery is necessary. I'm worried it won't actually help my spinal surgery outcomes.	"Not convinced," "Worried," "Won't help"	Furrowed brow, crossed arms, shaking head
2. Concerned Contemplator	What information do you need to feel more comfortable with the decision to undergo bariatric surgery?	I want to know more about the risks and complications of the surgery, and how it will affect my daily life.	"Risks," "Complications," "Daily life"	Fidgeting, pensive expression, seeking eye contact
3. Determined Doer	What steps are you taking to prepare for bariatric surgery and the necessary lifestyle changes?	I've started a pre-surgery diet and exercise plan, and I'm attending support group meetings to learn from others who have gone through the process.	"Diet," "Exercise," "Support group"	Confident posture, nodding, direct eye contact
4. Enthusiastic Embracer	How do you envision your life changing after undergoing bariatric surgery and spinal surgery?	I'm excited to have more energy and less pain. I'm looking forward to being able to do activities I enjoy without limitations.	"Excited," "Energy," "Without limitations"	Smiling, energetic gestures, leaning forward

AI Synthesizing the Thoughts of the Patient Mind-Sets at the Time of the Bariatric Operation

Up to now, we have dealt with the synthesis of the four mind-sets as they move along the journey. Our next topic is to use the large language model, this time ChatGPT 3.5, to suggest what might the patient be thinking at two of the journey stages: 1, Diagnosis & Treatment Recommendation, and 3, Bariatric Surgery. That is, what emerges when we program the AI to synthesize the thoughts

which might be going through the mind of the patient when the patient is preparing for the operation, when the patient is being wheeled into the operation, when the patient is into recovery, and so forth.

It remains very important to realize that even though we have a synthesis here generated entirely by AI, what AI ends up providing could be used for educational purposes. Whether, in fact, the

results are quite accurate or not is less important than the ability of AI to synthesize what might be happening, and by doing so, sensitize the medical professional to what a patient is thinking. This sensitization can be considered as part of the medical professional's education.

Tables 8-12 show the sets of thoughts synthesized by AI for each mind-set during the two stages. We broke the Surgery section into three: Check-in, On the Gurney, and In Recovery. These are sub-steps that every surgical patient moves through. The prompt was simply the information provided by Table 4 as background information, followed by the request to provide a paragraph of thoughts for each mind-set.

Table 8: Thoughts When the Surgery is First Recommended (Journey Stage 1).

<p>Mind-Set 1: The Skeptical Sideliner may be thinking “Do I really need bariatric surgery before my spinal surgery? Is it worth the risk? Can’t I just try to lose weight on my own? What if something goes wrong during the surgery?” Their skepticism and resistance may lead them to research alternative options or seek second opinions before making an appointment for bariatric surgery.</p> <p>Mind-Set 2: The Concerned Contemplator may be thinking “What are the potential risks and benefits of bariatric surgery? Will it help me lose weight before my spinal surgery? What do I need to know before making this decision?” Their cautious and uncertain mind-set may prompt them to gather as much information as possible before scheduling an appointment and to consult with friends, family, or healthcare professionals for advice.</p> <p>Mind-Set 3: The Determined Doer may be thinking “I’m ready to take charge of my health and make a change. Bariatric surgery seems like the right option for me to lose weight before my spinal surgery. I need to schedule an appointment and start preparing for the process.” Their proactive and determined attitude may drive them to take immediate action and follow through with the necessary steps to move forward with bariatric surgery.</p> <p>Mind-Set 4: The Enthusiastic Embracer may be thinking “I can’t wait to start this journey towards a healthier me! Bariatric surgery is the perfect solution to help me lose weight before my spinal surgery. I’m excited to schedule the appointment and share my experiences with others.” Their optimism and motivation may lead them to eagerly embrace the idea of bariatric surgery and eagerly anticipate the positive outcomes it may bring.</p>

Table 9: “Second Thoughts” When the Patient is Alone, After Being Told About the Planned Surgery (Journey Stage 1).

<p>Mind-Set 1: Skeptical Sideliner may be thinking about their past failed attempts at weight loss and feeling doubtful about whether bariatric surgery will actually help them. They may be resistant to the idea, thinking that they should be able to lose weight on their own without surgery. Frustration and anxiety may be present as they consider the risks and benefits of the procedure, and they may feel a sense of helplessness about their current situation. When meeting the doctor and other medical professionals, they may display a defensive attitude, avoiding direct eye contact and crossing their arms as a way to protect themselves from feeling vulnerable.</p> <p>Mind-Set 2: Concerned Contemplator may be thinking about the potential risks and benefits of bariatric surgery and feeling cautious and uncertain about whether it is the right choice for them. They may be apprehensive about the procedure and have worries about the recovery process. Seeking reassurance and information, they may have a lot of questions for the doctors and other medical professionals to help them make an informed decision. Fidgeting and nervous gestures may be present as they contemplate their options and consider the implications of undergoing the surgery.</p> <p>Mind-Set 3: Determined Doer may be feeling committed and focused on their goal of losing weight before spinal surgery through bariatric surgery. They may be hopeful and anticipate a positive outcome from the procedure. Planning and preparation may be on their mind as they think about what steps they need to take to successfully undergo the surgery. When meeting the doctor and other medical professionals, they may exude confidence in their decision, displaying a direct gaze and nodding in agreement with the recommendations given to them.</p> <p>Mind-Set 4: Enthusiastic Embracer may be feeling optimistic and excited about the prospect of undergoing bariatric surgery to lose weight before spinal surgery. They may be motivated by the potential for a positive transformation in their health and appearance. Eager to start the process, they may be eager to share their experiences with others and encourage them to consider the surgery as well. When meeting the doctor and other medical professionals, they may be smiling and using energetic gestures as they lean forward, demonstrating their enthusiasm for the procedure.</p>

Table 10: Thoughts at the Time Of “Checking In” to the Hospital for the Planned Surgery (Journey Stage 3).

Mind-Set 1: When the Skeptical Sideliner checks into the hospital for the bariatric surgery before spinal surgery, they may be thinking about all the potential risks and negative outcomes associated with the procedure. They may be questioning the effectiveness of the surgery and wondering if it is worth the potential complications. They may be feeling anxious and frustrated about having to undergo such a drastic measure to lose weight. They might be worried about the recovery process and how it will impact their daily life. Despite their doubts, they may also be feeling a sense of helplessness and resignation as they go through the procedure.

Mind-Set 2: The Concerned Contemplator, on the other hand, may be feeling a mix of emotions as they check into the hospital for the bariatric surgery. They may be feeling cautious and apprehensive about the procedure, but also curious and information-seeking. They may be weighing the risks and benefits in their mind and seeking reassurance from medical professionals. They may be feeling confused about whether this is the right decision for them and worried about the potential outcomes. They may be fidgeting nervously as they await the surgery but also trying to stay calm and composed.

Mind-Set 3: The Determined Doer checking into the hospital for the bariatric surgery may be feeling confident and focused on the task ahead. They may have already made a plan and prepared themselves for the surgery, and they are ready to adhere to all recommendations given to them. They may be feeling hopeful and optimistic about the results of the surgery and motivated to make positive changes in their life. They may have a sense of anticipation as they wait for the surgery to begin and may be feeling determined to see it through to the end. Their posture may be confident, and they may be making direct eye contact with medical staff, nodding in agreement with the plan ahead.

Mind-Set 4: The Enthusiastic Embracer checking into the hospital for the bariatric surgery may be feeling excited and motivated for the procedure. They may be optimistic about the results and eager to start their journey towards a healthier lifestyle. They may be sharing their enthusiasm with others, possibly encouraging fellow patients who may be feeling nervous or unsure. They may be smiling and using energetic gestures as they discuss their hopes and dreams for the future after the surgery. They may be leaning forward in anticipation of the procedure and feeling a sense of joy as they take this important step towards their weight loss goals.

Table 11: Thoughts When the Patient is Wheeled on the Gurney to the Surgical Theater (Journey Stage 3).

Mind-Set 1: The Skeptical Sideliner may be feeling a sense of doubt and resistance as they are taken to the surgery. They may be thinking about the risks and potential negative outcomes of the surgery, questioning whether it will help them in the long run. They may also be feeling frustrated and anxious about the unknown factors involved in the procedure. The Skeptical Sideliner may be resistant to the idea of undergoing surgery for weight loss before spinal surgery and may be thinking about alternative options or ways to avoid going through with it.

Mind-Set 2: The Concerned Contemplator may be feeling cautious and uncertain as they are taken to the surgery. They may be thinking about all the information they have gathered, weighing the pros and cons of the surgery, and seeking reassurance that they are making the right decision. The Concerned Contemplator may be feeling nervous and worried about the outcome of the surgery, but also hopeful that it will ultimately improve their health. They may be contemplating the potential benefits of going through with the surgery, while also acknowledging their fears and uncertainties.

Mind-Set 3: The Determined Doer may be feeling committed and proactive as they are taken to the surgery. They may be thinking about the planning and preparation they have done leading up to the surgery and feeling confident in their decision to undergo the procedure. The Determined Doer may be focused on adhering to recommendations from their healthcare team and ready to take on the challenges that come with the surgery. They may be thinking about the positive outcomes they are hoping to achieve through the surgery and feeling optimistic about their future health.

Mind-Set 4: The Enthusiastic Embracer may be feeling optimistic and motivated as they are taken to the surgery. They may be thinking about the excitement of finally getting started on their weight loss journey and the potential for positive changes in their health. The Enthusiastic Embracer may be feeling eager to share their experiences with others and encourage them to also take steps towards better health. They may be thinking about the joy and enthusiasm they feel for the journey ahead, and eagerly anticipating the results of the surgery.

Table 12: Thoughts When the Patient is Waking Up Comfortably in the Recovery Room after a Successful Surgery (Journey Stage 4).

Mind-Set 1: The Skeptical Sidelineer may be waking up in the recovery room feeling doubtful and resistant about the bariatric surgery they just underwent. They may be thinking about the potential risks and complications of the surgery, as well as wondering if it was the right decision for them. They may be feeling frustrated and anxious about the recovery process and may be hesitant to follow post-operative instructions. They may also be thinking about how they can avoid further surgeries in the future and procrastinating on making any changes to their lifestyle. Overall, their mind-set may be one of skepticism and reluctance towards the surgery.

Mind-Set 2: The Concerned Contemplator may be waking up in the recovery room feeling cautious and uncertain about the bariatric surgery they just underwent. They may be thinking about the potential benefits and drawbacks of the surgery, as well as how it will impact their future health. They may be feeling anxious and confused about the recovery process and may be seeking reassurance from the medical staff. They may also be contemplating their options for post-operative care and wondering if they made the right decision. Overall, their mind-set may be one of cautious contemplation and concern about their future.

Mind-Set 3: The Determined Doer may be waking up in the recovery room feeling committed and proactive about the bariatric surgery they just underwent. They may be thinking about the positive changes that the surgery will bring to their health and quality of life. They may be feeling hopeful and determined about their recovery process and may already be planning for their post-operative care. They may be focused on adhering to the recommendations of the medical staff and preparing themselves for the challenges ahead. Overall, their mind-set may be one of determination and confidence in their ability to succeed.

Mind-Set 4: The Enthusiastic Embracer may be waking up in the recovery room feeling optimistic and motivated about the bariatric surgery they just underwent. They may be thinking about all the exciting possibilities that come with their weight loss journey and feeling grateful for the opportunity to improve their health. They may be feeling joyful and eager to start their recovery process, as well as sharing their experiences with others. They may be enthusiastic about encouraging others who may be considering bariatric surgery and looking forward to the new chapter in their life. Overall, their mind-set may be one of enthusiasm and positivity about their future.

Discussion

A healthcare provider who values the emotional and mental well-being of their patients can cultivate a deep sense of trust and support. Ensuring that psychological issues or concerns are addressed before, during, and after the surgery is crucial for a successful outcome and long-term weight loss for the patient. Understanding the patient's perspective is crucial in the fast-paced medical field, where time and resources are often limited.

In the complex world of healthcare administration, it is essential for providers to comprehend the requirements of their patients in a way which transcends simple "factoids." An empathic, and personalized treatment can be achieved, resulting in improved results. By placing a strong emphasis on the mental well-being of patients, healthcare providers can effectively reduce complications, increase patient satisfaction, and ultimately enhance long-term outcomes following bariatric surgery. Understanding psychological factors can help identify and tackle potential barriers to complying with post-operative care plans before they become significant issues.

AI has emerged as a potent tool which can augment and enrich the healthcare provider's comprehension of the patient, rather than supplanting it. Through the coupling of human interaction with AI synthesis, it is likely that healthcare professionals will end up acquiring insights into patient mind-sets that may not be immediately evident through conventional methods. As a precautionary note, however, one should use AI as a supplementary tool to enhance and assist, rather than substitute, the human element in patient care.

Five advantages of AI to support medical endeavors are:

- AI can rapidly and effectively analyze vast amounts of data, enabling it to uncover valuable insights into the mental states of patients both pre- and post-surgery.
- AI can tailor recommendations and interventions by analyzing individual patient profiles.
- AI can improve the patient experience by enabling better communication and understanding between healthcare providers and patients.
- AI may anticipate patient outcomes and identify potential complications following surgical procedures.
- AI may help develop new mental health resources for patients who are going through bariatric surgery.

There is the “rest of the story.” One of the most concerning aspects of utilizing artificial intelligence to understand the patient’s mind is the risk of dehumanizing the patient’s experience and substituting human empathy with algorithms. Some critics may argue that AI’s understanding of the emotional and psychological aspects of bariatric surgery patients may be limited, potentially impacting the quality of care provided. This criticism should be kept in mind, not as a “rate limiting step,” but simply as a precaution. Another limitation is the lack of validation of the mind-sets and journey stages through real-world clinical studies. Until the framework is tested and refined through empirical research, its validity and reliability remain uncertain.

Conclusions

The AI-generated mind-sets and journey stages provide a conceptual starting point for future clinical studies to validate and refine the framework. With further research and development, the mind-set approach has the potential to improve patient outcomes and satisfaction, and to inform the development of digital assessment tools and personalized care recommendations.

The mind-set framework presented in this report has important implications for managing patients who are encouraged to undergo bariatric surgery before spinal surgery. By understanding the distinct attitudes, emotions, and behaviors associated with each mind-set, healthcare providers can develop personalized care strategies and support systems to better meet the needs of individual patients. The mind-set framework presented in this report offers a promising approach for personalizing care for patients who are encouraged to undergo bariatric surgery before spinal surgery. By understanding the distinct attitudes, emotions, and behaviors associated with each mind-set, healthcare providers can develop tailored communication and support strategies which meet the needs of individual patients.

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Disclaimer

The mind-sets, journey stages, best words, tools and tables were AI-generated from the most recent training set available for Anthropic’s Claude AI. This report is intended as a demonstration

for educational purposes only and to possibly serve as inspiration for real-world clinical study for testing the ideas within. The report does not provide factual clinical guidance.

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