

## Research Article

# What Ordinary People Want from Their 'Regular' Visits to the Doctor: A Mind Genomics Cartography

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## Abstract

Respondents evaluated systematically created vignettes, viz., combinations of elements (messages) about benefits to going to their doctor for a yearly check-up. The vignettes comprised 2-4 elements selected from the set of 16 elements, with the vignettes created by experimental design which ensured both that the elements did not mutually contradict each other, and that the elements were statistically independent of each other. Each of 101 US respondents evaluated a unique set of 24 vignettes, following the standard test protocol used in the emerging science of Mind Genomics. Respondents rated these vignettes on a two-sided scale of motivation and believability. Based upon the pattern of coefficients for equations relating elements to the rating of 'motivates me', three clearly different mind-sets emerged; respectively, those focusing on the visit to assess the growth of children, those focusing on obtaining their vital measures and advice about eating, and those focus on advice from the doctor about what to do to maintain an active lifestyle. In contrast, self-profiling classification of attitudes could not uncover these three clearly different and intuitively meaningful mind-sets. The paper finishes by introducing the PVI, personal viewpoint identifier, comprising six elements from the study, a two-point scale, the pattern of answers to which assigned a new person to one of the three mind-sets.

## Background

The objective of this paper is the continuing effort of an emerging science, Mind Genomics, to understand how people perceive the world of the ordinary, how people make decisions, and perhaps most important, the existence of and nature of different ways that ordinary people look at topics of their everyday world. Rather than focusing on unusual situations to increase our understanding, Mind Genomics focuses on the daily, quotidian world, in which most people live.

The particular topic dealt with here is the understanding of what ordinary people look for when they think about what is important to the when they make their regular appointments to see their doctor. The notion of regular appointments may seem obvious, but if we were to probe more deeply into the topic, might we end up seeing deep differences which make sense, differences that we intuitively know, but differences which when recognized allow the visit to the doctor to be much more effective for both patient and doctor. A simple Google Scholar® query about 'attitudes regarding 'attitudes about yearly check up visits to the doctor' generated 90,400 hits as of October 16, 2023. Many more hits 384,000, emerged when the query was 'what patients want from doctors during their annual visit'. For Google itself, there were upwards of 400,00 hits. Clearly this is an important topic to people.

The approach present here, Mind Genomics, provides the researcher with the opportunity to structure a situation of the

ordinary life, so that situation can be explored with ordinary people, an exploration that can be done in a matter of hours and days, at an affordable price, in a structured, templated fashion anywhere in the world, and with powerful knowledge and tools emerging from the exercise [1,2]. The objective is to see whether or now the Mind Genomics science can produce new-to-the-world information in hours and days, teaching the profession new things, providing new tools for the world of health.

## Doing the Study

The Mind Genomics approach works by creating vignettes, combinations of ideas pertaining to the topic, instructing the respondents to rate these vignettes on a scale, and then deconstructing the rating to estimate the contribution of each of the ideas or elements to the overall rating. The rationale for this 'indirect' approach is that the test stimuli more naturally approximate what the person might experience in everyday life. Rather than having the respondent evaluate ideas one by one, as is done in typical questionnaires, Mind Genomics reduces the intellectual burden by simply having the respondent respond with an immediate feeling to what is read.

The nature of the stimuli, these vignettes, deserves explication because of the power of the approach:

1. The vignettes evaluated by the respondents are created by so-called experimental design. The experimental design prescribes

the precise combination of elements to appear in each vignette. The use of experimental design to create the combinations means that each respondent's data can be analyzed totally separately, for that respondent, OR incorporated into an analysis for a defined group of respondents. This is called a 'within-subjects design,' and constitutes a powerful features for analysis.

2. Each respondent evaluates a totally different set of vignettes, the totally different sets created by a systematic permutation of the elements, with the statistical properties of the underlying experimental design maintained [3]. Thus, the researcher can do studies on topics without having had to plan for a long time in order to make sure that the testing is done on the 'right' vignettes. Mind Genomics encourages the researcher to 'do the experiment' rather than be subject to paralysis, to the overthinking captured by the popular adage 'measure nine times and cut once.' Mind Genomics encourages experimentation, not over-thinking, and as we will see below, prevents 'analysis paralysis.'
3. The respondent is given 24 vignettes to evaluate, one vignette after the other. The underlying experimental design prescribes the combinations. The respondent need only read and react to the vignette. The vignette is created to be simple, comprising a set of phrases, the elements, one phrase on each line, without connecting words which end up cluttering. The structure enables the respondent to 'graze' through the information and assign a rating. The structure also ends up being less 'taxing' on the respondent because the physical format of the vignette, one line (approximately) per element, requires less effort. Figure 1 shows the distribution of responses times with response times of 9 seconds or longer truncated to 9 seconds. It is clear from Figure 1 that the respondents appeared to be able to assess and rate the vignette very easily. Most of the responses times are three seconds or shorter. Whether or not the data are 'valid,' make sense, and teach us will be discussed below.
4. The use of compound vignettes comprising different elements ensures that it is impossible to 'game the system.' In study after study, the desire to game the system emerges among academics and professionals, who feel stymied, complaining that they could not ascertain the 'correct answer.' It is the combinations of elements of different kinds which creates seeming a 'blooming, buzzing confusion,' in the words of Harvard's eminent, late 19<sup>th</sup> Century psychologist, William James..

## The Mechanics of Creating the elements and the Test Vignettes

The actual construction of the study by the researcher is straightforward. The researcher follows a set of templated steps, the first being a request for four questions which explore the topic, and the second being the request for four answers to each question. When first confronted with the task of choosing a topic and then asking

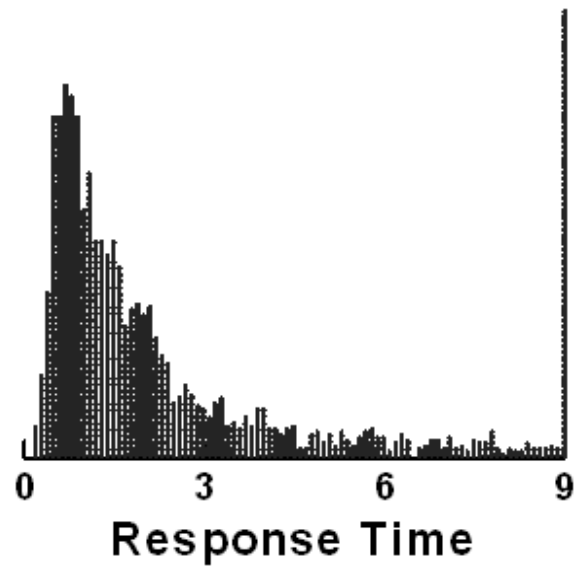


Figure 1: Distribution of response times across all vignettes evaluated in positions 2-24.

four questions which 'tell a story' or at least 'flesh out the topic,' the unpracticed researcher in Mind Genomics finds it easy to choose a topic but becomes flustered when requested to ask four questions which 'tell a story.' Simply put, the education that people receive all too often focuses on choosing the right answer, or even coming up with an answer to a question. The 'thinking' is structured, and not necessarily good. Memory and perhaps judgment are rewarded, but not the ability to create a new edifice to house knowledge. It is at this point, the request for the four questions, that many would-be researchers 'freeze,' often abandoning the effort in anticipated frustration.

Figure 2 shows an example of the templated format for a typical study. Panel A at the top shows the screen shots for the four questions. This is the point at which the excitement may turn to dismay. Panel B shows the Idea Coach, with a box encouraging the researcher to write a short paragraph, a 'squib' in Mind Genomics language. The squib provides a chance for the researcher to describe the problem in detail, and specify the nature of the answers, both in terms of tonality (explanation vs list), and in terms of style (approximate number of words, reading level, etc.). Panel C shows the types of answers returned by the Idea Coach. The actual results, viz., questions, answers (elements), and results, will constitute the remaining topics of this paper.

The AI-enhanced feature of the Mind Genomics platform in BimiLeap.com is called Idea Coach. With Idea Coach, the researcher simply types in a paragraph about the topic (called here 'squib'), requesting questions to be asked. The Idea Coach returns with 15 questions, and later with an AI-summarization of the themes and other features of those 15 questions. The researcher selects the questions which are of interest or can request a 're-run' of the Idea Coach for another 15 questions. Furthermore, the researcher can modify the paragraph to change the direction of the underlying AI as that AI attempts to create the questions.

Table 1 present the first set of 15 questions, along with the subsequent AI based summarization of patterns in these 15 questions

**Figure 2:** A typical set-up template for questions showing where Idea Coach enters and can be invoked. The actual text for the Idea Coach query and the four questions returned by AI are specific to the study.

The 15 questions appear immediately, but the AI summarized appears later, after the researcher has completed the selection of questions and answers. When looking at Table 1, one can focus on the original paragraph, the questions, and then the different types of AI summarization. These questions, or more specifically the answer book of 'logical pages,' one page for each request for questions (and later for answers to the questions), provides an education in and of itself.

The ingoing questions posed by the researcher are the following: *Topic: We're having a problem. We don't know how to get patients to come back for yearly visits. How can we communicate with our patients to convince them that's it's important to come back? Make the questions more of explanations than just a list. Make the questions understandable to a 10-year-old. Make the questions 20 words or fewer.*

When looking at the 'top,' viz. query, it is important to keep in mind that the researcher guided the AI by giving the AI specifics. These specifics describe the topic (get patients to come back), the specific problem (how can we communicate that it's important), how to shade the question (make the questions more of explanations than just a list), how to ensure the question is understandable (understandable to a 10-year-old), and readable (20 words or fewer). Table 1 shows the success of this effort as well as the aforementioned summarization by AI. It is important to note that the actual effort generated several of these pages, because the research was geared both to answering a question and to learning about the topic. Table 1 is meant just as an example; the final four questions were selected from different iterations of Idea Coach, each iteration taking about 15 seconds.

The final questions selected were then used as inputs to Idea Coach. Once again, each iteration focused on generating 15 answers to the specific question. The answers were obtained from Idea Coach, put into the study, and then edited manually to correct the grammar, and to make the answer simple. Table 2 show a set of answers to one question.

It is important to keep in mind that that the Idea Coach, empowered by AI, becomes itself a tool to teach the researcher. Thus, what had started as a seeming insurmountable obstacle at the time Mind Genomics was born, the issue of thinking about questions and answers, ended up generating an additional and powerful benefit, viz., education at the early stage of thinking, even before the experiment is actually run with real people.

The final set of questions and answers appear in Table 3. Keep in mind that Table 2 presents the actual questions used to generate the different answers, as well as presenting the edited answers; the editing was done by the researcher before the study was run. This process ensures simple questions, simple answers, both short, and understandable to the respondent. In the actual experiment the respondent will only see combinations of answers, and never see the questions. The role of the question is only to generate the answers, either from AI or from the mind of the researcher. One final note is relevant here. Experience shows that this process ends up educating the researcher quickly on the topic, often resulting in the desire for the researcher to put in her or his own ideas rather than relying on the AI. That itself, the creation of confidence and excitement, becomes a strong reason for using the Idea Coach.

### The Rating Scale

The main focus of this study is on the degree to which the messages motivate the respondent, at least within this format. We do not know what the respondent will actually do when giving the messages, although previous studies in the medical world have shown that the proper messages can double the number of colonoscopies [4] , as well as substantially reduce the number of within-30-day-readmissions to the hospital for patients who were suffering from CHF (congestive heart failure) [5].

**Table 1:** Results from the first effort to create 15 questions.

Questions - Results 1

Topic: We're having a problem. We don't know how to get patients to come back for yearly visits. How can we communicate with our patients to convince them that it's important to come back? Make the questions more of explanations than just a list. Make the questions understandable to a 10-year-old. Make the questions 20 words or fewer.

Topic Questions:

- Why is it important to visit the doctor every year?
- How does seeing the doctor yearly keep us healthy?
- What can happen if we don't visit the doctor regularly?
- Can the doctor catch problems before they get worse during yearly visits?
- How can doctors help keep us strong and happy during yearly check-ups?
- Can doctors teach us things to stay healthy for a long time?
- What happens if we don't go to the doctor, and something goes wrong?
- Does going to the doctor every year make sure our body is growing well?
- Can doctors make sure our bodies are working the way they should?
- How can doctors help us if we're feeling sick during yearly visits?
- Can our doctors give us tips to prevent getting sick during the year?
- Do doctors need to see us to make sure we're not hiding any pain?
- Can doctors give us special medicine or treatments to help us stay healthy?
- Can visits to the doctor help us stay strong like superheroes?
- Do our doctors have special powers to keep us healthy and safe during yearly visits?

Key Ideas

1. Importance of annual doctor visits
2. Benefits of yearly check-ups for maintaining good health
3. Consequences of not visiting the doctor regularly
4. Early detection of problems during annual visits
5. Role of doctors in promoting strength and happiness during check-ups
6. Education on long-term health practices from doctors
7. What happens if problems arise without seeing a doctor
8. Monitoring body growth through yearly doctor visits
9. Doctors ensuring proper function of the body
10. Assistance for sickness during yearly check-ups
11. Tips for illness prevention from doctors
12. Addressing pain or discomfort during doctor visits
13. Medications or treatments prescribed by doctors for maintaining health
14. Emphasizing the role of doctors in promoting overall well-being
15. Perception of doctors having special powers for health and safety during check-ups.

**Themes**

1. Importance of regular visits and check-ups:
  - Importance of annual doctor visits
  - Benefits of yearly check-ups for maintaining good health
  - Consequences of not visiting the doctor regularly
2. Early detection and prevention:
  - Early detection of problems during annual visits
  - Role of doctors in promoting strength and happiness during check-ups
  - Education on long-term health practices from doctors
  - Monitoring body growth through yearly doctor visits
  - Doctors ensuring proper function of the body
  - Assistance for sickness during yearly check-ups
  - Tips for illness prevention from doctors
3. Treatment and care:
  - What happens if problems arise without seeing a doctor
  - Addressing pain or discomfort during doctor visits
  - Medications or treatments prescribed by doctors for maintaining health

4. Overall well-being and perception of doctors:

- Emphasizing the role of doctors in promoting overall well-being
- Perception of doctors having special powers for health and safety during check-ups.

**Perspectives**

1. Importance of regular visits and check-ups:

- Pluses: Improved overall health, early detection of potential health issues, peace of mind
- Minuses: Time-consuming, potential financial burden, fear or anxiety associated with medical visits
- Interesting: The impact of regular check-ups on long-term health outcomes, the influence of cultural and societal factors on the perception of doctor visits

2. Early detection and prevention:

- Pluses: Increased chances of successful treatment, empowerment through knowledge and education, potential cost savings in the long run
- Minuses: Potential false alarms or unnecessary medical interventions, discomfort or embarrassment during examinations
- Interesting: The role of technology in early detection, the psychological benefits of proactive health management

3. Treatment and care:

- Pluses: Access to professional medical guidance and expertise, potential relief from pain or discomfort, personalized treatment plans
- Minuses: Potential side effects or complications from treatments, reliance on medications or interventions
- Interesting: The evolving field of medicine and the introduction of new treatments, the effectiveness of alternative therapies

4. Overall well-being and perception of doctors:

- Pluses: Perception of doctors as guardians of health, trust and confidence in medical professionals, the positive impact of doctor-patient relationships on overall well-being
- Minuses: Doctor-patient communication barriers, potential healthcare inequalities or biases, negative experiences with doctors leading to mistrust
- Interesting: Cultural or historical influences on the perception of doctors, the influence of media and popular culture on the portrayal of doctors

**What is missing**

Some missing topic questions that can complete an understanding of the topic are:

- What are the common tests or screenings that doctors perform during yearly check-ups?
- How can annual doctor visits help in early detection and prevention of diseases?
- Are there specific age groups or populations that need to visit the doctor more frequently?
- Can regular doctor visits help in managing chronic conditions or illnesses?
- How important is it for children to have annual check-ups with their pediatricians?
- Do doctors provide counseling or guidance on nutrition, exercise, and healthy lifestyle habits during yearly visits?
- Can doctors address mental health concerns during annual check-ups?
- Are there any recommended vaccinations or immunizations that doctors administer during yearly visits?
- How can regular doctor visits contribute to overall well-being and quality of life?

**Alternative Viewpoints**

1. Why is it important to visit the doctor every year?

- Some may argue that visiting the doctor every year is unnecessary if one feels healthy and has no underlying health concerns. Regular check-ups may be seen as excessive and an unnecessary use of time and resources.

2. How does seeing the doctor yearly keep us healthy?

- An alternative viewpoint might argue that relying solely on annual check-ups is not enough to maintain good health. They might emphasize the importance of adopting healthy lifestyle habits and actively taking care of one's physical and mental well-being throughout the year.

3. What can happen if we don't visit the doctor regularly?

- Opposing viewpoints could suggest that individuals can still maintain good health without regular doctor visits. They might argue that minor health issues can often be resolved on their own or through self-care practices without needing professional medical intervention.

4. Can the doctor catch problems before they get worse during yearly visits?

- Some people might believe that regular visits to the doctor may not always result in the early detection of health issues. They may argue that some conditions may not manifest or be identifiable until later stages, even with consistent check-ups.

5. How can doctors help keep us strong and happy during yearly check-ups?

- Alternative viewpoints could argue that the role of the doctor is primarily focused on diagnosing and treating illnesses, and that maintaining personal strength and happiness is the responsibility of the individual through self-care, healthy relationships, and various other factors.

6. Can doctors teach us things to stay healthy for a long time?

- Opposing viewpoints might suggest that individuals can educate themselves through various resources like books, online articles, or health-related courses to learn how to stay healthy without relying solely on doctors for advice.

7. What happens if we don't go to the doctor and something goes wrong?

- Some individuals might believe that if a health issue arises, they can seek medical attention as needed rather than making regular doctor visits. They may argue that this approach prevents unnecessary medical interventions and reduces healthcare costs.

8. Does going to the doctor every year make sure our body is growing well?

- Alternative viewpoints might argue that the growth and development of the body can generally be gauged through personal observation and self-care practices, without requiring regular doctor visits.

9. Can doctors make sure our bodies are working the way they should?

- Opposing viewpoints might question the ability of doctors to fully understand every individual's unique body functioning. They may argue that some individuals might have minor variations in their body's functioning without it being a cause for concern or requiring medical intervention.

10. How can doctors help us if we're feeling sick during yearly visits?

- Alternative viewpoints might suggest that individuals can often self-diagnose and self-treat common illnesses or seek medical advice from pharmacists or other healthcare professionals rather than relying solely on doctors for treatment.

11. Can our doctors give us tips to prevent getting sick during the year?

- Opponents might argue that individuals can obtain information on illness prevention through other sources like public health campaigns, educational websites, or community health programs, making regular visits to the doctor for prevention tips unnecessary.

12. Do doctors need to see us to make sure we're not hiding any pain?

- Some individuals might disagree and believe that it is not necessary for doctors to physically examine them to determine if they are hiding any pain. They might argue that open and honest communication with healthcare providers can effectively address any concerns without requiring in-person visits.

13. Can doctors give us special medicine or treatments to help us stay healthy?

- Alternative viewpoints might emphasize the importance of lifestyle modifications and overall self-care practices as key components of staying healthy, suggesting that relying solely on medicine or treatments may not be the most effective approach.

14. Can visits to the doctor help us stay strong like superheroes?

- Some individuals might argue that equating doctors to superheroes may be an exaggerated view that overestimates the impact doctors alone have on an individual's health. They may emphasize the importance of personal responsibility and

#### **Interested Audiences**

1) Parents: Parents are likely to be interested in these topic questions as they are responsible for their children's health and well-being. Regular visits to the doctor ensure that any underlying health issues are identified and addressed promptly.

2) Individuals with chronic conditions: People with chronic conditions such as diabetes, high blood pressure, or heart disease may be interested in these questions as regular check-ups help monitor their condition and prevent any worsening of symptoms or complications.

3) Elderly individuals: Older adults may find these questions relevant as they often require more frequent medical care due to their age-related health concerns. Regular visits to the doctor can help detect age-related conditions and provide appropriate interventions.

4) Health-conscious individuals: Individuals who prioritize their overall well-being and want to take proactive measures to maintain good health may be interested in these questions. Regular visits to the doctor can provide guidance on preventive care, healthy habits, and lifestyle choices.

5) Students and young adults: Younger individuals may find these questions relevant as they may have questions or concerns about their physical development, growth, and general well-being. Regular check-ups during these stages of life can help ensure healthy growth and provide guidance on healthy habits.

6) Individuals without insurance or access to healthcare: People who are uninsured or lack easy access to healthcare may find these questions important as they highlight the potential consequences of not visiting the doctor regularly. This information can empower them to seek medical help and prioritize their health.

#### **Opposing Audiences**

Some audiences that might oppose the topic of visiting the doctor every year are:

1. Individuals who are generally healthy and have not had any major health issues. They may believe that if they feel fine, there is no need to visit the doctor regularly, as it may be seen as unnecessary and a waste of time and money.

2. Individuals who are afraid of doctors or have a fear of medical procedures. They may have had negative experiences with doctors in the past, leading to a distrust in the medical profession and a reluctance to seek regular check-ups.

3. Individuals who rely heavily on alternative medicine or natural remedies. They may have a belief that the body has the ability to heal itself and that regular medical check-ups are not necessary if they are taking care of their health through alternative means.

4. Individuals without access to healthcare or who can't afford regular doctor visits. Financial constraints and lack of insurance coverage can prevent some people from seeking regular medical care, making it difficult for them to support the idea of yearly doctor visits.

Overall, there can be various reasons why these audiences might oppose the idea of visiting the doctor every year, including personal beliefs, past experiences, financial constraints, and access to healthcare.

#### **Innovations**

1. Telemedicine platforms: This allows patients to have virtual visits with doctors, promoting regular check-ups without the need for physical presence.

2. Health monitoring apps and wearables: These products enable individuals to track their health metrics and receive personalized insights, encouraging early detection and prevention of potential health issues.

3. Patient-centered medical homes: This model of primary care focuses on providing comprehensive and coordinated healthcare services, emphasizing the importance of regular visits and check-ups.

4. Preventive health packages: These packages combine various medical screenings and tests to offer a comprehensive assessment of one's health status, encouraging individuals to prioritize regular check-ups.

5. Personalized health coaching services: These services provide individuals with tailored lifestyle recommendations and support, helping them adopt healthy habits and prevent potential health issues.

6. Community health fairs: These events bring together healthcare providers, organizations, and the community to offer free or affordable health screenings, promoting the importance of regular check-ups.

7. Holistic healthcare approaches: Emphasizing the mind-body connection, these approaches integrate conventional medicine with complementary therapies such as acupuncture, yoga, or aromatherapy to promote overall well-being.

8. Mobile clinics: These initiatives bring healthcare services to underserved areas or remote communities, offering regular check-ups and medical care to those who may have limited access to facilities.

9. Health insurance coverage for annual check-ups: Policies that prioritize preventative care by offering coverage for annual doctor visits, encouraging individuals to prioritize their health.

10. Patient education campaigns: These campaigns aim to dispel misconceptions or fears about doctors and medical visits, emphasizing the importance of regular check-ups and empowering individuals to take charge of their health.

**Table 2:** Results from the first effort to create 15 answers to the first question.

Answers - Results 1

Explain in detail how yearly visits to the doctor keep you healthy. Make your explanation in 15 words or fewer and to a level of a 10-year-old.

Topic Statements:

- The doctor checks your body and asks questions to make sure everything is okay.
- They can find any problems early and help prevent them from becoming worse.
- They measure your height, weight, or temperature to see if anything has changed.
- They listen to your heartbeat and check your breathing to make sure they're normal.
- They can give you vaccines to protect you from getting sick.
- They might take a small sample of your blood to check for any signs of illness.
- They can look at your eyes, ears, and throat to make sure they're healthy.
- The doctor can give advice on how to eat healthily and exercise regularly.
- They can ask about your feelings and emotions to make sure you're happy and not stressed.
- If you have any questions or concerns, you can ask the doctor during the visit.
- They can give you medicine if you're feeling sick or have pain.
- They can check your teeth and mouth to make sure they're clean and healthy.
- The doctor can make sure you're getting enough sleep for proper growth.
- They can teach you about good hygiene habits, like washing your hands properly.
- Seeing the doctor regularly helps build a trusting relationship and ensures they know your health well.

**Key Ideas**

1. The doctor performs a physical examination and asks questions to assess overall health.
2. Early detection and prevention of health problems is a key function of the doctor.
3. Measurements of height, weight, and temperature are taken to monitor any changes.
4. Checking heartbeat and breathing ensures normal functioning of vital signs.
5. Vaccines are administered to provide protection against illnesses.
6. Blood samples may be taken to identify signs of illness.
7. Evaluation of eyes, ears, and throat ensures their health.
8. The doctor provides advice on healthy eating and regular exercise.
9. Assessment of emotions and mental health is conducted.
10. Patients can inquire about any concerns or questions during the visit.
11. Medication is prescribed for illness or pain relief.
12. Dental and oral health are examined.
13. The importance of adequate sleep for growth is emphasized.
14. Good hygiene practices, including handwashing, are taught.
15. Regular visits to the doctor build trust and familiarity with one's health.

**Perspectives**

Plus factors:

- The doctor checks your body and asks questions to ensure your overall well-being.
- They can find problems early and prevent them from worsening.
- The doctor can provide vaccines to protect against illnesses.
- They can give advice on healthy eating, exercise, and hygiene habits.
- Seeing the doctor regularly helps establish a trusting relationship and ensures comprehensive care.

Minus factors:

- Some procedures might cause discomfort, such as blood tests or physical examinations.
- The doctor might diagnose an underlying health issue, causing worry or stress.
- Depending on the healthcare system, accessing regular check-ups and treatments may be costly or inconvenient.

Interesting factors:

- The doctor checks various aspects of health, including physical, emotional, and dental.
- They can analyze blood samples to detect signs of illness.
- Regular visits allow for continuous monitoring and understanding of an individual's health.

**Additional information**

Importance of preventive care and regular check-ups for overall health and well-being

Alternative Viewpoints

1. Some people may believe that regular check-ups with the doctor are unnecessary and a waste of time.
2. Alternative viewpoints may argue that doctors only focus on physical health and neglect mental or emotional well-being.
3. Some individuals may believe that vaccines are unnecessary and potentially harmful.
4. Others may argue that blood samples are invasive and unnecessary for routine check-ups.
5. Alternative perspectives may state that doctors often overlook or dismiss certain symptoms or concerns.
6. Some individuals may believe that visiting the doctor regularly is too expensive or inaccessible for everyone.
7. Alternative viewpoints may argue that doctors often overprescribe medication, leading to unnecessary drug consumption.
8. Others may argue that good hygiene habits can be learned without the need for a doctor's guidance.
9. Some individuals may believe that regular doctor visits can foster dependency on medical professionals rather than promoting self-care.
10. Alternative viewpoints may assert that doctors do not consider socio-economic factors that may impact a person's health.

**Interested Audiences**

1. Parents of young children: Parents are likely to be interested in these topic statements because they are responsible for the health and well-being of their children. Knowing what the doctor checks for during a visit and how they can help prevent health problems from worsening is important information for parents.
2. Individuals with chronic health conditions: People with chronic conditions may be interested in these statements because they regularly see a doctor to manage their condition. They can benefit from understanding the various aspects of their health that the doctor assesses during visits and how it can help prevent complications.
3. Students and young adults: Students and young adults may find these statements relevant as they navigate their own healthcare. Understanding what to expect during a doctor's visit and the importance of regular check-ups can help them take control of their own health and seek appropriate medical care.
4. Individuals interested in preventive healthcare: People who prioritize preventive healthcare and wellness may be interested in these statements as they highlight the role of doctors in early detection and prevention of health problems. They may want to learn about different ways doctors assess their health and receive advice on maintaining a healthy lifestyle.
5. Healthcare professionals: Doctors, nurses, and other healthcare professionals might find these statements relevant as a reminder of the comprehensive approach to healthcare. They demonstrate the importance of addressing different aspects of health during patient visits and provide a comprehensive overview of the doctor's role in promoting overall well-being.

**Opposing Audiences**

1. Anti-vaccination groups: They might oppose the statement "They can give you vaccines to protect you from getting sick" because they believe that vaccines can be harmful and are unnecessary.
2. Alternative medicine proponents: They might oppose the statement "They can give you medicine if you're feeling sick or have pain" because they prefer using natural remedies and holistic approaches to treat illnesses and pain.
3. Privacy advocates: They might oppose the statement "They might take a small sample of your blood to check for any signs of illness" because they believe that individuals should have full control over their medical data and that invasive procedures should only be done with explicit consent.
4. Skeptics of mainstream medicine: They might oppose most of the topic statements as they distrust the medical profession and do not believe in the effectiveness or necessity of regular check-ups and interventions.
5. Parental rights activists: They might oppose the statement "They can look at your eyes, ears, and throat to make sure they're healthy" if they believe that such examinations are invasive and should only be performed with the explicit consent of the child or their parents.

**Innovations**

1. Telemedicine platforms that allow patients to check in with their doctor remotely, reducing the need for in-person visits.
2. Wearable devices that can monitor and track vital signs such as heart rate, breathing, and temperature, providing real-time data for doctors to assess.



3. Preventive healthcare programs that focus on early detection and intervention, such as comprehensive health check-ups and screenings.
4. Health coaching services that provide personalized guidance on nutrition, exercise, and overall well-being.
5. Mobile applications or online platforms that provide access to educational resources and tools for maintaining good hygiene practices.
6. Collaborative healthcare models that involve interdisciplinary teams, including doctors, psychologists, nutritionists, and physical therapists, to provide comprehensive care.
7. Integrative medicine approaches that combine traditional medical treatments with complementary therapies, such as acupuncture or mindfulness, to promote overall health and wellness.
8. Patient portals or electronic health records that allow individuals to have easy access to their medical history, test results, and communicate with their healthcare provider.
9. Public health campaigns and policies aimed at promoting preventive care and regular check-ups for individuals of all ages.
10. Research initiatives and advancements in personalized medicine, using genetic testing and biomarkers to tailor treatments and preventive measures to each individual's specific needs.

**Table 3:** The four questions and their four sets of answers used in the study.

	<b>Question A: Explain in detail how yearly visits to the doctor keep you healthy. Make your explanation in 15 words or fewer and to a level of a 10-year-old.</b>
A1	Benefit of visit: doctor will listen to your heartbeat and check your breathing to make sure they're normal.
A2	Benefit of visit: Doctors can give you vaccines to protect you from getting sick or spreading diseases.
A3	Benefit of visit: doctors can check your blood pressure and make sure it is not too high.
A4	Benefit of visit: they give advice on eating healthy food and staying active to grow strong.
	<b>Question B: Explain how in detail doctors can prevent serious illnesses during yearly visits. Make your explanation in 15 words or fewer and to a level of a 10-year-old.</b>
B1	What happens during visit: They can perform physical examinations to check your body and see if everything looks normal.
B2	What happens during visit: They talk about how much exercise you do and why it's important to stay active.
B3	What happens during visit: Doctors can look at our eyes, ears, and mouth to check if they are healthy.
B4	What happens during visit: Doctors can do tests like blood tests or X-rays to make sure everything is alright.
	<b>Question C: Explain how a yearly visit help us monitor a child's growth development in detail. Make your explanation in 15 words or fewer and to a level of a 10-year-old.</b>
C1	For children: Doctors check how much taller the child has become.
C2	For children: They measure the child's weight to see if they are getting bigger.
C3	For children: They ask questions to see if the child is learning new things.
C4	For children: They check if the child's teeth are growing well.
	<b>Question D: Explain how a doctor can provide guidance on eating right and exercising to be healthy in detail. Make your explanation in 15 words or fewer and to a level of a 10-year-old.</b>
D1	Lifestyle guidance: A doctor can tell you what foods are good for you and what exercises you should do.
D2	Lifestyle guidance: They can show you different exercises, like running or playing sports, that make you strong.
D3	Lifestyle guidance: They can suggest fun activities to keep you active, like jumping rope or riding a bike.
D4	Lifestyle guidance: They can teach you to choose water over sugary drinks, which is better for your body.

The opportunity to investigate two aspects of messaging, e.g., motivation and believability, has emerged as a way of increasing the usefulness of the Mind Genomics experiment. To this end, the research used a two-sided five-point scale, a new approach in Mind Genomics. The points on the rating scale enable the respondent to rate both motivating (no/yes) and believable (no/yes). The scale below shows these two sides, and the frequency of their selection across the 2424 vignettes, evaluated by the 101 respondents.

Rating question: Think about going to the doctor. Here's a paragraph about a visit. How do you feel personally when you read this paragraph Choose how you feel.

*Scale Points*

1=Does not motivate me...AND...I have no emotional response to it  
11.7%

2=Does not motivate me...BUT...I get an emotional response when I read it  
10.8%

3=I can't answer  
18.8%

4=Motivates me...BUT...I have no emotional response to it  
28.2%

5=Motivates me...AND...I get an emotional response when I read it  
30.4%

A separate part of the Mind Genomics experience required the completion of a self-profiling questionnaire, allowing the research to obtain information about the attitudes and behaviors. These questions and answers are shown in Table 4. The respondent was present with each question separately, in a 'pull down menu', showing the question and the different answers. The respondent was instructed to select one answer for each question.

**Table 4:** The self-profiling classification questions.

<p>Tell me how you typically visit your doctor. Select which one describes you best.</p> <p>1=I religiously see my doctor during the year and whenever I'm told to</p> <p>2=I only see my doctor when I'm sick</p> <p>3=I see my doctor when I get alarmed by something I read or hear</p> <p>4=I see my doctor during flu season only</p>
<p>How do you get your medical information most frequently?</p> <p>1=I get my medical information from friends</p> <p>2=I get my medical information off the web</p> <p>3=I get a lot of my medical information from specialized information booklets from my doctor</p> <p>4="I wing it"</p>
<p>When you doctor asks you to follow up with them how do you feel?</p> <p>1=I'm very grateful to meet with my doctor</p> <p>2=I find it annoying</p> <p>3=I'm very anxious to find out</p> <p>4=I forget about it often unless I'm sick</p> <p>5=I dread what I may hear at the next visit</p>
<p>How would someone objectively describe your compliance behavior when it comes to taking medications ?</p> <p>1=I take my medicine religiously as prescribed</p> <p>2=I take my medicine as prescribed but not exactly to schedule</p> <p>3=I sometimes forget to take my medicine</p> <p>4=I feel bad that I forget to take my medication when I should</p>
<p>How would you describe your exercise routine?</p> <p>1=I regularly go for walks every morning</p> <p>2=I don't bother moving around a lot</p> <p>3=I do it when I remember to do it</p> <p>4=I don't really do it, but I feel guilty for not doing it</p> <p>5=I'm out of shape</p>
<p>How would you describe the way you eat?</p> <p>1=I eat whenever I'm hungry</p> <p>2=I eat regularly 3 times a day when I should</p> <p>3= I snack between meals</p>

## Executing the Study

The actual study is executed in a straightforward manner. The Mind Genomics platform, BimiLeap, enables the researcher to select the respondents, their location, age, etc., through a built-in API linked to the panel provider, Luc.id, Inc., located in Louisiana. Luc.id is actually an aggregator, sourcing respondents from different online providers, located around the world. Thus, it is possible to work with defined respondents, viz., 'survey takers', from anywhere in the world. These respondents have already volunteered to participate, knowing that their data is entirely anonymized. The only information obtained about them is from their self-profiling, the questions shown in Table 4, along with age and gender.

## Analysis

The data from each respondent is stored in the form of a vector or row of data, one row for each vignette. Thus, each respondent generates 24 rows of data. The first sets of columns are reserved for study identification and respondent identification. The information here includes the answers to the respondents self-profiling questions, this information repeated 24 times, once for each vignette. The second set of columns shows the specific composition of the vignette, starting with the order of testing (1-24), and then 16 columns, one for each of the 16 elements. The cell for each element is given the value '0' when the element is absent from the vignette and the value '1' when the element is present in the vignette. By design, each row will have shown a minimum of two '1's, and a maximum of four '1's.' The third set of columns show the rating, and the response time. The last set of columns show transformed rating data, defined and described in the next paragraph.

To prepare for an appropriate analysis, the rating scale data must be transformed to present the data appropriately for subsequent regression analysis using OLS, ordinary least squares regression [6]. The objective of Mind Genomics is to relate the presence/absence of the elements to the response. There are actually two responses here: motivating (vs not motivating), and believable (vs. not motivating). The research here focuses primarily on motivating vs not motivating, but it is also interesting to find out the messages which are believable vs not believable.

The strategy to decouple motivating from believable consists of creating a new set of binary variables through simple transformations:

R5=Motivates and believable. R5=100 when the rating is 5. Otherwise R5=0.

R54=Motivates. R54=100 when the rating is 5 or 4. Otherwise, R5=0.

R52=Believable. R52=100 when the rating is 5 or 2. Otherwise R52=0.

R3=Don't know. R3=100 when the rating is 3. Otherwise, R3=0.

R41=Not believable. R41=100 when the rating is 4 or 1. Otherwise, R41=0.

R21=Does not motivate and not believable. R21=100 when the rating is 2 or 1. Otherwise R21=0.

RTSeconds=Response time in seconds. The BimiLeap program measures the elapsed time between the appearance of the vignette and the rating assigned by the respondent. The time is measured with a resolution of hundredths of seconds.

To each of the newly created binary variables, viz., those given a value of either 100 or 0, a vanishingly small random number is assigned, this number less than  $10^{-5}$ . OLS, ordinary least-squares regression, requires that the dependent variable have some minimal variability. In the case that the dependent variable has no variability, either for a given individual or for what will be the relevant subgroup, the OLS regression will ‘crash.’ For example, this might well happen when a respondent avoids the rating ‘3’. For that respondent, R3, Don’t Know, will always have the transformed value of 0. Any effort create a model or equation relating the ratings of that respondent to the presence/absence of the 16 elements will end up with the OLS regression program ‘crashing.’ To avoid that problem is simple; add this vanishingly small random number to every transformed rating, ensuring that all newly created binary values (e.g., R5 ... R21) ends up with some minimum variation. This prophylactic step ensures that all of the equations will run when OLS regression is used.

### OLS Regression – Relating the Presence/Absence of the Elements to the Binary Variables and Response Time

The objective of Mind Genomics is to quantify the contribution of the individual ideas or elements as they drive a dependent variable. The key variable in this study is ‘motivates’, captured by the newly created binary variable, R54. Whenever the vignette is rated as motivating (rating 5 or 4), R54 becomes 100. Otherwise, R54 becomes 0. Given this information, can we determine the degree to which each of our 16 elements ‘drives’ that rating of ‘motivates’? The answer to the foregoing question is a simple YES, due to the effort made in the set-up of the vignettes according to experimental design. The permuted experimental design ensures that each of the 16 elements appears

statistically independently of every other one of the 16 elements, that there are some ‘incomplete vignettes,’ lacking an answer from question or an answer from two questions. These properties enable the OLS regression to estimate the absolute value of the driving power of the element.

The driving power of the element is the magnitude of the coefficient in the equation below:

$$DV (\text{dependent variable}) = k_1A1 + k_2A2 \dots K_{16}D4$$

The additive model does not depend upon an interpretation of the data. Rather, the OLS regression simply uses the mathematical properties of the data to estimate the 16 coefficients. The additive constant is not calculated for the simple reason that it is important to be able to compare the coefficients from one study to another, in terms of their absolute values. The only way this comparison can be ensured is to force all of the information to be embedded in the coefficient. By having an additive constant, a baseline, the researcher has to first account for differences in baseline, and then account for differences in coefficients, considering the baseline. That effort is not productive when one is attempting to create a large-scale database across topics, across culture, and across time. It is more reasonable to estimate the coefficients without the complications caused by the additive constant. This change in the computation formula has been slowly emerging, prompted by the desire to understand the ‘stories’ embedded in different studies as they are revealed by the coefficients

### Creating the Models or Equations for the Total Panel for the Different Dependent Variables

The Mind Genomics effort ‘comes alive’ when we look at the

**Table 5:** Coefficients for models (equations) relating the 16 elements to the newly created binary variables, and for response time (RT), The table is sorted by the values of coefficients for ‘motivate’ (R54).

	Total Panel	R5	R54	R52	R3	R41	R21	RT
	Motivates	Y	Y				N	
	Believable	Y		Y		N		
D4	Lifestyle guidance: They can teach you to choose water over sugary drinks, which is better for your body.	11	22	11	1	15	4	0.6
B1	What happens during visit: They can perform physical examinations to check your body and see if everything looks normal.	12	20	16	4	13	8	0.8
B2	What happens during visit: They talk about how much exercise you do and why it's important to stay active.	11	19	12	7	10	3	0.7
C4	For children: They check if the child's teeth are growing well.	9	19	11	4	15	7	0.8
D1	Lifestyle guidance: A doctor can tell you what foods are good for you and what exercises you should do.	9	19	10	4	13	4	0.6
B4	What happens during visit: Doctors can do tests like blood tests or X-rays to make sure everything is alright.	11	18	15	4	12	8	0.7
D3	Lifestyle guidance: They can suggest fun activities to keep you active, like jumping rope or riding a bike.	11	18	14	5	8	4	0.5
C2	For children: They measure the child's weight to see if they are getting bigger.	9	18	12	4	13	7	0.9
C3	For children: They ask questions to see if the child is learning new things.	12	16	16	4	9	10	1.1
B3	What happens during visit: Doctors can look at our eyes, ears, and mouth to check if they are healthy.	11	16	15	5	10	9	0.7
C1	For children: Doctors check how much taller the child has become.	9	16	14	6	10	9	0.9
D2	Lifestyle guidance: They can show you different exercises, like running or playing sports, that make you strong.	7	16	10	3	13	7	0.5
A2	Benefit of visit: Doctors can give you vaccines to protect you from getting sick or spreading diseases.	6	15	10	8	11	6	0.6
A1	Benefit of visit: doctor will listen to your heartbeat and check your breathing to make sure they're normal.	4	14	7	9	13	6	0.8
A3	Benefit of visit: doctors can check your blood pressure and make sure it is not too high.	4	14	8	6	13	7	0.9
A4	Benefit of visit: they give advice on eating healthy food and staying active to grow strong.	5	12	9	11	9	6	0.6

'meaning' of the strong performing elements, if indeed we do have these elements. For Mind Genomics studies, the notion of 'strong performing' has been reserved for those elements of a positive nature with coefficients 21 or higher, and for those elements of a negative nature with coefficients of 15 or higher. Table 5 shows only one strong performing positive element, for motivating (D4: Lifestyle guidance: They can teach you to choose water over sugary drinks, which is better for your body), and only two strong performing negative elements, both for believable (D4: Lifestyle guidance: They can teach you to choose water over sugary drinks, which is better for your body, and C4. For children: They check if the child's teeth are growing well).

The foregoing results are confusing. There is clear differentiation across elements in Table 5, both in terms of 'motivating' and in terms of 'believable.' Thus, the results are not due to the lack of differentiation across the elements, but perhaps to a deeper issue, e.g., the type of respondent. It may be that the 101 respondents comprise different groups of respondents with varying levels of interest and belief in what could be said and done in a routine doctor's examination. If so, then the specific patterns might be elusive. The next analysis addresses this possibility by focusing on the way people describe themselves.

### Responses of Key Subgroups in Terms of Motivate

The Mind Genomics process generates a great deal of data. The most practical way to deal with the plethora of information is to focus on one dependent variable, using that variable as the lens through which to examine the mind of the respondent as the respondent evaluates the vignettes. Once we focus more precisely, using one dependent variable, we will end up with many more strong performing elements, as we see in Table 6, where we focus on one variable (motivates, R54), and were we have divided people by what they say about some of their motivations and activities pertaining to health and lifestyle.

Table 6 is more gratifying because it shows many elements driving motivation, not just one element as we saw for the total panel in Table 5. Yet, in this increased number of strong performing elements it is difficult, indeed almost impossible, to synthesize a meaningful pattern. Knowing the way, a person answers questions about her or his attitudes and behaviors regarding the world of health and social interaction does not really allow the doctor to deeply understand the patient, at least in a formal, structured level. There may be some clues in the different classifications, but once again the lack of a clearly interpretable pattern emerges, this time with the plethora of strong performing elements, a plethora which seems to be incapable of simple definition. Face with this type of pattern, it is not surprising that many practitioners fail to understand their patients, at least in a structured way. The literature may be filled with data about specific medical conditions and their correlation with indices, but we fail to see tight connections.

### Mind Sets

A hallmark of Mind Genomics is the focus on the search for basic groups in the population defined by the way they think about specific, granular topics. The 'regular visit to the doctor' is such a granular topic. The introduction to this paper talked about the general issue of what patients want from their doctors. The topic of a regular

visit to the doctor puts the person's thinking into a far more concrete realm. The material that the respondent may have to examine and evaluate need not be large scale issues, but may paint concrete 'word pictures,' describing a very ordinary situation. Thus, as a research tool to understand the mind of the patient, or indeed of anyone, the Mind Genomics science provides a tool that can be honed and sharpened to a micro-focus on the minutia of a topic, minutia which might see irrelevant in the big picture, but might be exceptionally relevant to the topic.

The creation of mind-sets is a straightforward process. The researcher follows these steps, each transparent, each simple, using well-defined and statistically valid methods.

Step 1 – For each respondent create a model relating the presence/absence of the 16 elements to the binary transformed rating. The dependent variable here is 'motivates', R54. The model, estimated by OLS regression, is valid because the initial experimental design ensured that each respondent would evaluate a set of 24 vignettes, designed analysis by OLS regression [7].

Step 2 – Create the matrix of 101 rows (one row for each respondent) and 16 columns (one column for each element).

Step 3 – Use k-means clustering to divide the set of 101 respondents twice, first into two non-overlapping groups, and then into three non-overlapping groups [8]. The k-means clustering program used by Mind Genomics computes a 'distance' between pairs of respondents based upon the degree to which they are parallel, viz., the degree to which they trace out the same pattern. The measure of distance is the quantity  $1-R$ , where R is the Pearson correlation coefficient. R has a high value of +1 when the two sets of coefficients are perfectly parallel, and thus have 'no dissimilarity' or 'no difference' in their patterns. The value  $(1-R)$  is then 0. In contrast, when the two sets of coefficients move in opposite directions, then R has a value of -1, and the quantity  $(1-R)$  becomes 2.0. All pairs of respondents generate some number between 2 and 0.

Step 4 – The k-means clustering program assigns the respondents to the clusters so that the distances between pairs of respondents within a cluster are small, whereas the distances between pairs of centroids of the clusters are large.

The clustering is not exact, but rather a heuristic. The objective of the clustering is to discover presumably more meaningful groups of respondents. The clustering algorithm does not consider any meaning attached to the elements, but rather uses numerical magnitudes. That is, there is no effort to interpret the clusters.

Henceforth, this paper will use the phrase 'mind-set' instead of the term 'cluster,' in order to keep the spotlight on the effort to understand the way the person thinks about a topic.

Table 7 shows the coefficients estimated for Total Panel, for the three-mind-set solution, and for the two-mind-set solution, respectively, both emerging automatically from the BimiLeap program. The three-mind-set solution seems to be the more powerful solution, producing many more coefficients of high magnitudes (21+). The two-mind-set solution seems to be a bit weaker. Furthermore, the

**Table 6:** Coefficients for the 16 elements for 'motivates' emerging from separate analyses of respondents self-defining themselves by their pattern of behavior and thinking (defined by the columns).

	Dependent variable = Motivate (R54)	Total	When do you see your doctor?		Where do you get your medical information?				What describes your eating behavior?		
			I religiously see my doctor during the year and whenever I'm told to	I only see my doctor when I'm sick	I get my medical information from friends	I get my medical information off the web	I get a lot of my medical information from specialized information booklets from my doctor	"I wing it"	I eat whenever I'm hungry	I eat regularly 3 times a day when I should	I snack between meals
	<b>Base Size</b>	101	45	39	13	30	46	12	42	48	11
<b>Question A: Explain in detail how yearly visits to the doctor keep you healthy.</b>											
A1	Benefit of visit: doctor will listen to your heartbeat and check your breathing to make sure they're normal.	14	12	15	13	13	12	22	14	15	9
A2	Benefit of visit: Doctors can give you vaccines to protect you from getting sick or spreading diseases.	15	15	16	11	10	18	21	15	16	18
A3	Benefit of visit: doctors can check your blood pressure and make sure it is not too high.	14	13	17	13	15	13	19	15	14	9
A4	Benefit of visit: they give advice on eating healthy food and staying active to grow strong.	12	11	13	12	14	10	18	17	8	14
<b>Question B: Explain how in detail doctors can prevent serious illnesses during yearly visits.</b>											
B1	What happens during visit: They can perform physical examinations to check your body and see if everything looks normal.	21	18	25	18	22	20	20	22	22	6
B2	What happens during visit: They talk about how much exercise you do and why it's important to stay active.	19	19	21	15	14	25	15	12	26	13
B3	What happens during visit: Doctors can look at our eyes, ears, and mouth to check if they are healthy.	17	18	19	11	14	19	24	16	21	
B4	What happens during visit: Doctors can do tests like blood tests or X-rays to make sure everything is alright.	19	21	18	15	11	23	19	16	22	15
<b>Question C: Explain how a yearly visit help us monitor a child's growth development in detail.</b>											
C1	For children: Doctors check how much taller the child has become.	16	14	22	16	19	18		10	24	4
C2	For children: They measure the child's weight to see if they are getting bigger.	18	16	25	9	21	23		12	20	25
C3	For children: They ask questions to see if the child is learning new things.	16	14	21	14	19	19	2	12	23	8
C4	For children: They check if the child's teeth are growing well.	19	18	22	13	22	24		9	26	20
<b>Question D: Explain how a doctor can provide guidance on eating right and exercising to be healthy in detail.</b>											
D1	Lifestyle guidance: A doctor can tell you what foods are good for you and what exercises you should do.	19	23	9	26	22	19	2	19	19	21
D2	Lifestyle guidance: They can show you different exercises, like running or playing sports, that make you strong.	16	17	13	12	18	16	11	15	16	19
D3	Lifestyle guidance: They can suggest fun activities to keep you active, like jumping rope or riding a bike.	18	17	19	14	25	18		15	18	29
D4	Lifestyle guidance: They can teach you to choose water over sugary drinks, which is better for your body.	22	23	17	23	23	23	10	15	22	46

three mind-set solutions appear to be more interpretable, indeed quite easy to interpret:

Mind-Set 1 – Focus on visit to monitor the child

Mind-Set 2 – Focus on vitals and advice on eating

Mind-Set 3 – Focus on advice to lead a healthful lifestyle

The attraction of the mind-set solutions is undeniable because of its simplicity. Although the experience of participating in these Mind Genomics studies often exasperates professionals because they cannot

**Table 7:** Performance of the elements by total panel, by three mind-sets, and by two-mind sets, respectively. The elements are sorted by the performance among the three emergent mind-sets.

	Coefficients (contribution to 'motivates, R54)	Total	MS 1 of 3	MS 2 of 3	MS 3 of 3	MS 1 of 2	MS 2 of 2
	<b>Base (number of respondents in this group)</b>	<b>101</b>	<b>37</b>	<b>32</b>	<b>32</b>	<b>56</b>	<b>45</b>
	<b>Sorted by MS 1 of 3 – Focus on visit to monitor child</b>						
C3	For children: They ask questions to see if the child is learning new things.	16	35	7	5	26	6
C2	For children: They measure the child's weight to see if they are getting bigger.	18	32	9	12	27	7
C4	For children: They check if the child's teeth are growing well.	19	32	15	9	25	11
C1	For children: Doctors check how much taller the child has become.	16	29	13	3	21	9
	<b>Sorted by MS 2 of 3 – Focus on vitals and advice on eating</b>						
A3	Benefit of visit: doctors can check your blood pressure and make sure it is not too high.	14	5	28	9	4	25
A1	Benefit of visit: doctor will listen to your heartbeat and check your breathing to make sure they're normal.	14	4	28	10	4	26
A4	Benefit of visit: they give advice on eating healthy food and staying active to grow strong.	12	1	28	10		27
A2	Benefit of visit: Doctors can give you vaccines to protect you from getting sick or spreading diseases.	15	8	24	14	8	24
B1	What happens during visit: They can perform physical examinations to check your body and see if everything looks normal.	21	19	22	19	20	21
D4	Lifestyle guidance: They can teach you to choose water over sugary drinks, which is better for your body.	22	16	21	30	21	23
	<b>MS 3 of 3 - Focus on advice to lead a healthful lifestyle</b>						
D1	Lifestyle guidance: A doctor can tell you what foods are good for you and what exercises you should do.	19	12	16	30	20	18
D2	Lifestyle guidance: They can show you different exercises, like running or playing sports, that make you strong.	16	6	16	28	13	20
B2	What happens during visit: They talk about how much exercise you do and why it's important to stay active.	19	16	11	28	21	15
D3	Lifestyle guidance: They can suggest fun activities to keep you active, like jumping rope or riding a bike.	18	17	11	25	20	14
B3	What happens during visit: Doctors can look at our eyes, ears, and mouth to check if they are healthy.	17	15	14	21	18	15
	<b>Not strong for Mindsets 1,2,3 of 3</b>						
B4	What happens during visit: Doctors can do tests like blood tests or X-rays to make sure everything is alright.	19	19	20	16	21	16

'guess the right answer', the reality is that ordinary people have no problem suspending their critical thinking, responding intuitively, and generating powerful results.

### Identifying the Respondents by Attitude Versus by a 'PVI' (Personal Viewpoint Identifier)

A continuing finding in Mind Genomics is that who a person IS, or how the person says she or he thinks about a topic often does not co-vary with how the person responds when confronted with specific, granular issues relevant to the topic. This lack of correspondence between what a person 'say's and how the person actually responds can be seen from the pattern of percepts in Table 8. At the start of the Mind Genomics 'experiment', before evaluating the vignettes, the respondent completed a self-profiling classification, comprising standard questions of gender and age, and then up to eight questions selected by the researcher, usually questions relevant to the topic.

Table 8 shows the self-profiling classification questions, and the percent of respondents selecting each answer. The clarity so evident in Table 7, based upon the response to the granular elements fails to emerge when the respondents separately profile themselves. Indeed, from Table 8 it would be difficult if not impossible to discern the presence of three radically different mind-sets

In recent years a new focus has been on the identification of individuals belonging to specific mind-sets, an effort which has ended up improving outcomes in the world of medicine. By knowing the mind-sets of patients discharged from the hospital after a bout with

congestive heart failure, the results suggested a decrease in the within 30-day readmission from 17% down to 5% for the patients in the ward were 'mind0typed' after release and given the appropriate motivation material to put on their refrigerator [9]. The creation of the PVI, the personal viewpoint has been made available world-wide at the website [www.pvi360.com](http://www.pvi360.com). The program to create the PVI uses the output of the Mind Genomics study to create the PVI [10].

Figure 3 shows the first two parts of the PVI. Panel A comprises a set of questions about the respondent, with these questions 'optional'. The rationale for these questions is primarily patient management, viz., the practical issue of picking up relevant patient data when the PVI data are included in a large-scale database. The PVI user can choose not to ask certain questions. Panel B comprises a set of six questions, coming directly from the results of the study, with the request for the person completing the PVI to choose one of two answers to each question. The six questions are randomized across the people who complete the PVI. The pattern of answers to the six questions map to the most likely of the three mind-sets, assigning the respondent to that mind-set. The important things to remember are that the language of the PVI questions is exactly the same language as that used to create the mind-sets, and that the PVI is an enhanced 'guess' about mind-set membership, but a guess based on actual response to relevant questions..

The desire to know more about the patient and the medical experience has produced an additional feature of the PVI, so-called specialty or additional questions. These questions 'tag along' at the

**Table 8:** Distribution of answers to self-profiling questions by the total panel, and by the respondents in the three mind-sets.

Numbers in the body of the table are column percents for each question	Total	MS1 Monitor development of the child.	MS2 Vitals and advice on eating	MS3 Advice to maintain a healthful lifestyle
<b>Number of respondents</b>	101	37	32	32
<b>Tell me how you typically visit your doctor. Select which one describes you best.</b>				
1=I religiously see my doctor during the year and whenever I'm told to	45	41	47	47
2=I only see my doctor when I'm sick	39	46	38	31
3=I see my doctor when I get alarmed by something I read or hear	10	11	6	13
4=I see my doctor during flu season only	7	3	9	9
<b>How do you get your medical information most frequently?</b>				
1=I get my medical information from friends	13	11	13	16
2=I get my medical information off the web	30	30	22	38
3=I get a lot of my medical information from specialized information booklets from my doctor	46	57	44	34
4="I wing it"	12	3	22	13
<b>When your doctor asks you to follow up with them how do you feel?</b>				
1=I'm very grateful to meet with my doctor	52	51	38	66
2=I find it annoying	10	8	16	6
3=I'm very anxious to find out	22	30	19	16
4=I forget about it often unless I'm sick	9	5	9	13
5=I dread what I may hear at the next visit	8	5	19	0
<b>How would someone objectively describe your compliance behavior when it comes to taking medications ?</b>				
1=I take my medicine religiously as prescribed	47	43	47	50
2=I take my medicine as prescribed but not exactly to schedule	32	32	34	28
3=I sometimes forget to take my medicine	15	14	16	16
4=I feel bad that I forget to take my medication when I should	7	11	3	6
<b>How would you describe your exercise routine?</b>				
1=I regularly go for walks every morning	50	57	50	41
2=I don't bother moving around a lot	20	19	19	22
3=I do it when I remember to do it	20	19	19	22
4=I don't really do it, but I feel guilty for not doing it	8	5	9	9
5=I'm out of shape	3	0	3	6
<b>How would you describe the way you eat?</b>				
1=I eat whenever I'm hungry	42	32	47	47
2=I eat regularly, 3 times a day when I should	48	60	44	38
3= I snack between meals	11	8	9	16

end of the actual PVI exercise. They enable the researcher to find out more information about a topic, and at the same time know the mind-set of the respondent who is answering the questions. The additional questions can be up to 20 in number, providing extensive additional information about the way mind-sets feel about other, related topics. These additional questions appear in Figure 4. The combination of additional questions with the PVI provides the researcher with a new

tool to understand how to communicate with patients of different mind-sets, for a specific medical (or other) topic.

### How Good are the Data – The IDT (Index of Divergent Thought)

Up to now the focus has been on the use of Mind Genomics to understand how people think. During the years that Mind Genomics

**Please read each question and give your first impression**

The information I am giving you is about my attitudes towards a specific topic(s). As part of the exercise, I am giving you information about myself. This information will be used to provide better choices in products and services, based on your answers.

I Agree to Participate  I Do Not Agree to Participate

Follow Up for Research and Marketing Purpose **Required**

Allow  Not Allow

**A**

Day of Week Taken **Required**

DAY

Approximate Time Taken **Required**

SELECT RANGE

If you were given an Admin code enter it below

Enter Admin Code if you were given one

If you were given a Respondent code enter it below

Enter Respondent Code if you were given one

Email address **Required**

Enter Email

Year of Birth **Required**

YEAR

Country **Required**

United States

Postal Code **Required**

Enter Postal Code

Phone Number **Required**

( ) -

Gender **Required**

GENDER

Ethnicity **Required**

NOT SPECIFIED

---

**BENEFIT OF VISIT: DOCTOR CAN CHECK YOUR BLOOD PRESSURE AND MAKE SURE IT IS NOT TOO HIGH.**

DOES NOT MOTIVATE ME TO VISIT DOCTOR

MOTIVATES ME TO VISIT DOCTOR

**BENEFIT OF VISIT: THEY GIVE ADVICE ON EATING HEALTHY FOOD AND STAYING ACTIVE TO GROW STRONG.**

DOES NOT MOTIVATE ME TO VISIT DOCTOR

MOTIVATES ME TO VISIT DOCTOR

**B**

**FOR CHILDREN: DOCTOR CHECK HOW MUCH TALLER THE CHILD HAS BECOME.**

DOES NOT MOTIVATE ME TO VISIT DOCTOR

MOTIVATES ME TO VISIT DOCTOR

**FOR CHILDREN: THEY CHECK IF THE CHILD'S TEETH ARE GROWING WELL.**

DOES NOT MOTIVATE ME TO VISIT DOCTOR

MOTIVATES ME TO VISIT DOCTOR

**BENEFIT OF VISIT: DOCTOR WILL LISTEN TO YOUR HEARTBEAT AND CHECK YOUR BREATHING TO MAKE SURE THEY'RE NORMAL.**

DOES NOT MOTIVATE ME TO VISIT DOCTOR

MOTIVATES ME TO VISIT DOCTOR

**FOR CHILDREN: THEY ASK QUESTIONS TO SEE IF THE CHILD IS LEARNING NEW THINGS.**

DOES NOT MOTIVATE ME TO VISIT DOCTOR

MOTIVATES ME TO VISIT DOCTOR

Figure 3: The first two parts of the PVI. Panel A shows the up-front questions about the respondent. Panel B shows the six questions and the two answer for each question.

has been used, again and again it has become obvious that users of Mind Genomics go through a learning process. The researchers don't really understand how to think creatively in the way Mind Genomics structures the process. At first the researchers grope around, often relying on Idea Coach to help them, but without a sense of what might be a strong question, and what might be cogent and meaningful answers. Creating a measure of 'goodness of the study' has become increasingly important as the use of Mind Genomics has evolved from consumer research professionals to young doctors, college students, and then high school and middle school students, and finally to grade school students.

The IDT (Index of Divergent Thought) is an attempt to quantify the 'goodness' of the study, through the summation of the weighted squares of the positive coefficients. Table 9 shows the computational formula. We already know the coefficient of each of the 16 elements for total panel, and for both the two mind-set solution and the three mind-set solution, respectively.

The IDT is 74, very respectable for a study of this type. The IDT turns into a benchmark, as the researcher searches for elements which represent strong performers, especially for the total panel, or in the case of mind-sets, among at least one of the two mind-sets, and one of the three mind-sets, respectively. After all is said and done, in the end, the IDT can become a way for someone to measure progress in thinking.

### AI Interpretation of the Three Mind-sets

At the start of the study, viz., when the elements were being created with the help of Idea Coach, one of the outputs of the process was the 'Idea Book', presenting the different sets of questions or answers, each set resulting from a query submitted to AI. After the BimiLeap platform used Idea Coach to develop the 15 questions or answers, these questions or answers were stored and 'summarized' set by set using a group of queries. The summarization generated a page of instructive output, shown in Tables 1 and 2, respectively.



**DOCTOR VISIT #1 PVI**  
**10.13.2023.1**

**TIME SPENT WITH YOUR DOCTOR DURING THE VISIT**

- MY DOCTOR GIVES ME PLENTY OF TIME
- IT'S OK, BUT SOMETIMES I NEED MORE TIME AND I DON'T GET IT
- I FEEL IT'S RUSHED

**HOW HARD IS IT TO GET AN APPOINTMENT WITH YOUR DOCTOR**

- IT'S REALLY EASY TO GET AN APPOINTMENT
- SOMETIMES IT TAKES A WHILE WITH THE ANSWERING SYSTEM
- IT'S A REAL PAIN

**IN THE PAST YEAR, HAVE YOU CHANGED YOUR FEELINGS ABOUT YOUR DOCTOR**

- I FEEL THE SAME WAY ABOUT MY DOCTOR THAT I ALWAYS HAVE
- MY DOCTOR SEEMS MORE DISTANT AND FAR CONCERNED
- I FEEL MY DOCTOR HAS CHANGED A LOT

**WHAT KIND OF NURSE PRACTITIONER DO YOU FEEL MOST COMFORTABLE WITH**

- A NURSE PRACTITIONER WHO HAS BEEN IN THE BUSINESS A LONG TIME
- A YOUNGER NURSE PRACTITIONER WHO KNOWS ALL THE NEW STUFF

**HOW DO YOU FEEL ABOUT THE MEDICAL INSURANCE COMPANIES**

- I'M OK WITH THEM
- A PAIN, BUT IT WORKS
- IT'S A HASSLE WITH THEM

**WHO DO YOU FEEL MOST COMFORTABLE WITH**

- I LIKE THE NURSE PRACTITIONER MOST
- I LIKE THE DOCTOR MOST
- I'M NOT COMFORTABLE WITH ANYONE AT THE DOCTOR'S OFFICE

**EXPERIENCE WAITING FOR YOUR DOCTOR**

- MY DOCTOR IS PROMPT
- I HAVE TO WAIT A BIT BUT IT'S OK
- I HAVE TO WAIT TOO LONG A LOT OF TIMES

**DO YOU FEEL YOUR HEALTH IS...**

- SAME AS BEFORE AND GOOD
- SAME AS BEFORE BUT NOT GOOD
- GETTING WORSE
- GETTING BETTER

**HOW DO YOU FEEL ABOUT YOUR OWN HEALTH**

- I'M REALLY HEALTHY
- I'M OK
- I HAVE PROBLEMS LIKE EVERYONE ELSE
- I AM WATCHING SOME SERIOUS CONDITIONS

**HOW DO YOU SCHEDULE YOUR APPOINTMENTS**

- I GO EVERY YEAR OR REQUIRED FREQUENCY
- I SORT OF REMEMBER, BUT SOMETIMES I MISS GOING
- I ONLY GO WHEN SOMETHING IS BOOTHERING ME

**WHAT DO YOU THINK WILL HAPPEN TO THE MEDICAL PROFESSION IN THE NEXT TWO YEARS**

- IT WON'T CHANGE MUCH
- IT'S TURNING INTO A BUSINESS WITH LESS SOUL
- IT'S GETTING BETTER WITH NEW SCIENCE

**HOW WELL DOES YOUR DOCTOR KNOW YOU**

- MY DOCTOR KNOWS ME WELL
- MY DOCTOR KNOWS ME, BUT NOT REALLY
- I DON'T THINK MY DOCTOR HAS TIME TO KNOW ME

**WHAT KIND OF DOCTOR DO YOU FEEL MOST COMFORTABLE WITH**

- A DOCTOR WHO HAS BEEN IN THE BUSINESS A LONG TIME
- A YOUNGER DOCTOR WHO KNOWS ALL THE NEW STUFF

**HOW DO YOU FEEL ABOUT THE MEDICAL PROFESSION**

- I FEEL OK ABOUT THE PROFESSION
- I SENSE SOMETHING IS CHANGING
- I AM NOT HAPPY WITH HOW THE MEDICAL WORLD IS CHANGING

Figure 4: The third part of the PVI, the specialty or additional questions.

Table 9: The IDT (Index of Divergent Thought), measuring the performance of the study in terms of incorporating ideas which perform strongly.

How good are the data – the IDT (Index of Divergent Thought) for strength of ideas)						
Coefficients (contribution to 'motivates;)	Total	MS 1 of 3	MS 2 of 3	MS 3 of 3	MS 1 of 2	MS 2 of 2
Number of respondents in the column (in the subgroup) = 303	101	37	32	32	56	45
Weight (Number of respondents/303)	101/303	37/303	32/303	32/303	56/303	45/303
Weighted sum of squared coefficients	1596	738	630	637	1005	823
Sum of the six weighted totals	5428					
IDT (index of divergent thought) = Square root of final sum	74					

**Table 10:** AI summarization for the strong performing elements for each of the three mind-sets emerging from the three-mind-set solution.**Mindset 1 of 3 – Focus on visit to monitor child's development**

The following is a description of attributes from the total sample of a research study. Interested in:

For children: Doctors check how much taller the child has become.; For children: They measure the child's weight to see if they are getting bigger.; For children: They ask questions to see if the child is learning new things.; For children: They check if the child's teeth are growing well.

Create a label for this segment:

Child Development Monitoring

Describe this segment:

This segment of the research study focuses on child development and growth. The researchers are interested in monitoring various attributes related to children's physical growth, cognitive development, and dental health. They measure the child's height to determine how much taller they have become, and their weight to observe any changes in their body size. They also ask questions to assess if the child is acquiring new knowledge or skills, indicating their cognitive growth. Additionally, the researchers examine the growth and development of the child's teeth to ensure they are growing properly. Overall, this segment aims to understand and track the overall development and well-being of the children participating in the study.

Describe the attractiveness of this segment as a target audience:

The target audience, in this case, is children. This segment is attractive for several reasons. Firstly, the fact that doctors check how much taller the child has become indicates a focus on monitoring the child's physical growth and development. This suggests that the research study is interested in understanding the factors influencing children's overall health and well-being.

Secondly, measuring the child's weight to see if they are getting bigger indicates a focus on monitoring the child's nutritional status. This suggests that the research study is interested in understanding the dietary patterns and nutritional needs of children, which is an important aspect of child development.

Thirdly, asking questions to see if the child is learning new things indicates a focus on cognitive development. This suggests that the research study is interested in understanding the factors influencing children's learning and educational progress.

Lastly, checking if the child's teeth are growing well indicates a focus on dental health. This suggests that the research study is interested in understanding the factors influencing children's dental development and oral hygiene practices.

Overall, the attractiveness of this segment as a target audience is high because it encompasses various aspects of children's health, growth, development, and education. The findings from such a study can provide valuable insights for healthcare professionals, educators, parents, and policymakers in ensuring the well-being and proper development of children.

Explain why this segment might not be attractive as a target audience:

This segment might not be attractive as a target audience because it specifically focuses on children and their growth and development. Targeting children as a consumer group can be challenging due to various reasons:

1. Limited purchasing power: Children generally do not have their own income source or purchasing power, relying on their parents or caregivers to make buying decisions for them. This limits their ability to directly engage with marketing efforts or make independent purchasing decisions.
2. Influencing through parents: While children may express preferences or desires for certain products, ultimately, parents or caregivers often have the final say in what products are purchased for them. Targeting children directly may not be effective if the marketing efforts fail to convince parents or caregivers.
3. Ethical considerations: Targeting children with marketing tactics can raise ethical concerns as they may be more vulnerable to advertising and may not fully comprehend persuasive techniques and the consequences of their purchasing decisions. This has led to increased scrutiny and regulations around marketing specifically aimed at children.
4. Age-related preferences: Children's preferences and interests can change rapidly as they grow and develop. What appeals to a child at one age may not be relevant or interesting to them at a different stage. This dynamic nature makes it challenging to create long-term brand loyalty within this segment.
5. Limited market reach: In terms of total addressable market (TAM), children represent a relatively smaller segment compared to other age groups, such as adults or teenagers. Depending on the product or service being offered, it may not be financially viable to solely target children if the market size is too small.

While targeting children as a segment can be valuable for certain industries or specific products, it also presents unique challenges that may make it less attractive compared to other age groups.

**List what is missing or should be known about this segment, in question form:**

1. How often are these measurements and checks conducted on the children?
2. What age range does this segment of children fall into?
3. Are there any specific growth charts or standards used to determine if the child's height and weight are within a healthy range?
4. What types of questions are asked to assess the child's learning progress?
5. Are there any specific guidelines or criteria used to determine if the child's teeth are growing well?

**List and briefly describe attractive new or innovative products, services, experiences, or policies for this segment:**

1. Smart Growth Tracking Devices: Instead of relying solely on manual measurements, smart growth tracking devices could be introduced to make it easier for doctors and parents to monitor children's height accurately. These devices can use advanced sensors and algorithms to track and analyze growth patterns in real-time, providing more precise data for medical assessments.
  2. Integrated Health Monitoring Apps: To complement weight measurement, an integrated health monitoring app can be developed that allows parents to track their child's weight and receive notifications or suggestions based on their growth curve. This app could also provide personalized growth charts and nutritional recommendations to help parents understand their child's development better.
  3. Interactive Learning Apps: Instead of relying solely on questioning, interactive learning apps can be utilized to engage children in a fun and educational way. These apps can incorporate games, quizzes, and challenges to encourage curiosity and help children learn new things. Additionally, the apps could provide progress reports to parents, indicating areas of improvement and suggesting relevant educational content.
  4. Tele-dentistry Services: Instead of waiting for a physical dental check-up, tele-dentistry services can be introduced to remotely assess the growth and condition of a child's teeth. With the use of mobile cameras and video conferencing, dentists can examine the child's mouth and provide recommendations on oral hygiene practices or the need for a physical visit if required.
- Overall, these new products, services, experiences, or policies aim to enhance the accuracy and convenience of monitoring children's growth and development while incorporating technology to improve engagement and access to healthcare services.

**Which messages will interest this segment?**

Some potential messages that may interest this segment could be:

1. "Discover how our doctors ensure your child's growth and development with regular measurements of height and weight."
2. "Find out how our doctors assess your child's learning progress and provide personalized guidance for their educational development."
3. "Learn how our experts closely monitor your child's teeth growth to ensure a healthy smile."
4. "Join us to understand how our doctors prioritize your child's overall well-being, tracking both physical and cognitive development milestones."

#### **Mindset 2 of 3 – Focus on vitals and advice on eating**

The following is a description of attributes from the total sample of a research study. Interested in:

Benefit of visit: doctor will listen to your heartbeat and check your breathing to make sure they're normal.; Benefit of visit: Doctors can give you vaccines to protect you from getting sick or spreading diseases.; Benefit of visit: doctors can check your blood pressure and make sure it is not too high.; Benefit of visit: they give advice on eating healthy food and staying active to grow strong.; What happens during visit: They can perform physical examinations to check your body and see if everything looks normal.; Lifestyle guidance: They can teach you to choose water over sugary drinks, which is better for your body;

#### **Create a label for this segment:**

"Health Monitoring and Lifestyle Guidance"

#### **Describe this segment:**

This segment of individuals values the benefits of visiting a doctor for various reasons. They appreciate that during these visits, doctors will listen to their heartbeat and check their breathing to ensure they are in good health. They also recognize the importance of receiving vaccines to protect themselves and others from sickness and disease. Furthermore, they understand that doctors can check their blood pressure and provide advice on maintaining a healthy lifestyle, such as eating nutritious food and staying active. Additionally, they appreciate that doctors can perform physical examinations to ensure everything in their body appears normal. This segment values the guidance provided by doctors in making healthier choices, such as choosing water over sugary drinks for better overall health.

#### **Describe the attractiveness of this segment as a target audience:**

This segment is highly attractive as a target audience. The benefits of visiting a doctor and the services they offer, such as listening to heartbeat and checking breathing, giving vaccines, checking blood pressure, providing advice on healthy eating, and performing physical examinations, are vital for maintaining and improving overall health. This segment shows an interest in proactive health management and a willingness to take steps towards a healthier lifestyle. Moreover, the emphasis on prioritizing water over sugary drinks indicates a concern for making informed choices for their well-being. As a target audience, this segment is likely to be receptive to healthcare education and interventions, making them a valuable group to engage with.

#### **Explain why this segment might not be attractive as a target audience:**

This segment might not be attractive as a target audience because the benefits described are basic and common knowledge to most people. The fact that a doctor listens to your heartbeat, checks your breathing, gives vaccines, checks blood pressure, or advises on healthy eating and staying active are services that are expected and offered by almost all doctors. Therefore, this segment does not offer any unique or specialized benefits that would make it stand out as a desirable target audience. Additionally, the lifestyle guidance mentioned, such as choosing water over sugary drinks, is also common knowledge to promote overall health, making this segment even less appealing as a target audience.

#### **List what is missing or should be known about this segment, in question form:**

1. Do doctors only focus on checking heartbeat and breathing during the visit?
2. What other benefits of a visit can doctors provide?
3. How often should one visit a doctor for check-ups and vaccinations?
4. Are there specific vaccines that doctors recommend for certain age groups or health conditions?
5. Can doctors provide treatments or medications besides vaccines?
6. How do doctors determine if a person's blood pressure is too high or normal?
7. Do doctors provide personalized advice on healthy eating and staying active, based on an individual's needs and goals?
8. What type of physical examinations do doctors perform during the visit?
9. Are there any specific tests or screenings that doctors conduct to ensure overall health?
10. How long does a typical visit to the doctor last?

#### **List and briefly describe attractive new or innovative products, services, experiences, or policies for this segment:**

- Telemedicine: The use of technology to provide medical consultations remotely, allowing individuals to receive healthcare services without physically visiting a doctor's office. This could be particularly beneficial for individuals who prefer convenience or have limited access to healthcare facilities.
- Personalized healthcare apps: Mobile applications that provide personalized health recommendations, reminders for medication intake and appointments, and access to health records. These apps can empower individuals to take control of their own health and make informed decisions.
- Virtual reality healthcare experiences: Incorporating virtual reality technology into healthcare settings can create immersive and interactive experiences that enhance the patient visit. For example, patients could virtually tour different areas of the body to gain a better understanding of their health conditions or treatments.
- Genetic testing services: Offering genetic testing kits that individuals can use at home to gain insights into their genetic predispositions for certain diseases or conditions. This can help individuals make proactive decisions about their health and adopt preventive measures.
- Healthy lifestyle subscription boxes: Delivering curated boxes of healthy food, snacks, and wellness products to individuals' homes on a regular basis. This not only promotes healthy eating habits but also introduces individuals to new and innovative health products.
- Mental health support platforms: Online platforms that provide access to mental health professionals, virtual therapy sessions, and self-care resources. This can help individuals address their mental health needs in a convenient and confidential manner.
- Prescription delivery services: Partnering with pharmacies to offer doorstep delivery of prescribed medications, ensuring individuals have easy access to their medications without having to visit a physical pharmacy.
- Fitness tracking applications: Utilizing wearable devices and mobile apps to track individuals' physical activity levels, sleep patterns, and overall fitness. This can provide personalized guidance and motivation for individuals to maintain an active and healthy lifestyle.

**Which messages will interest this segment?**

Based on the attributes mentioned, the following messages will likely interest this segment:

1. The doctor will listen to your heartbeat and check your breathing to ensure they're normal.
2. Doctors can give you vaccines to protect you from getting sick or spreading diseases.
3. Doctors can check your blood pressure and ensure it is not too high.
4. They provide advice on eating healthy food and staying active to grow strong.
5. They can perform physical examinations to check your body and see if everything looks normal.
6. They can teach you to choose water over sugary drinks, which is better for your body.

Overall, this segment seems to be particularly interested in the health benefits of visiting a doctor, such as monitoring vital signs, receiving vaccinations, and getting lifestyle guidance for maintaining a healthy body.

**Mindset 3 of 3 – Focus on advice to maintain a healthful lifestyle**

The following is a description of attributes from the total sample of a research study. Interested in:

What happens during visit: They talk about how much exercise you do and why it's important to stay active.; What happens during visit: Doctors can look at our eyes, ears, and mouth to check if they are healthy.; Lifestyle guidance: A doctor can tell you what foods are good for you and what exercises you should do.; Lifestyle guidance: They can show you different exercises, like running or playing sports, that make you strong.; Lifestyle guidance: They can suggest fun activities to keep you active, like jumping rope or riding a bike.; Lifestyle guidance: They can teach you to choose water over sugary drinks, which is better for your body.;

**Create a label for this segment:**

"Health Education and Lifestyle Guidance at Doctor's Visits"

**Describe this segment:**

This segment of the research study focuses on the activities that occur during a visit to the doctor's office. During the visit, the doctors primarily emphasize the importance of exercise and staying active. They discuss the amount of exercise the patients do and the reasons why it is essential for maintaining good health.

Additionally, the doctors also conduct physical examinations by examining the patients' eyes, ears, and mouth to assess their overall health.

Furthermore, the doctors provide lifestyle guidance to the patients, specifically concerning their diet and exercise choices. They inform the patients about foods that are beneficial for their health and recommend specific exercises such as running or playing sports to help them stay strong.

In terms of lifestyle guidance, the doctors also suggest different fun activities, like jumping rope or riding a bike, to encourage the patients to engage in enjoyable physical activities. Moreover, they educate the patients about the importance of choosing water over sugary drinks in order to maintain a healthy body.

Overall, this segment highlights the comprehensive approach taken by doctors during visits, emphasizing the significance of exercise and offering lifestyle guidance to promote overall health and well-being.

**Describe the attractiveness of this segment as a target audience:**

This segment of individuals seems highly attractive as a target audience. They are interested in discussions about exercise and understand the importance of staying active. They value their health and are open to receiving lifestyle guidance from doctors. This makes them more likely to be receptive to advice on nutrition and exercise, indicating a potential willingness to adopt healthier habits. Additionally, their interest in fun activities and willingness to try different exercises suggests that they are motivated and actively seeking ways to stay active. Overall, this segment appears engaged and open to making positive changes in their lifestyle, making them a desirable target audience for health and wellness-related initiatives.

**Explain why this segment might not be attractive as a target audience:**

This segment might not be attractive as a target audience because it appears to already have a basic understanding of the importance of exercise, healthy eating, and staying active. They seem to be seeking guidance and advice from doctors on these topics, suggesting that they are already motivated to live a healthy lifestyle. Therefore, they may not require significant persuasion or education on these matters, making it less likely that they would be receptive to targeted marketing efforts. Additionally, their interests and preferences for activities, such as running or playing sports, may vary widely, making it challenging to tailor specific messaging or products to this diverse group.

**List what is missing or should be known about this segment, in question form:**

1. Are the visits focused solely on discussing exercise and its importance or are other health-related topics also addressed?
2. How frequently do these visits occur? Is there a recommended frequency for follow-up visits?
3. Is there a specific age group or population that this research study focuses on?
4. What qualifications or credentials do the doctors have who conduct these visits?
5. What are the potential health risks or benefits associated with the suggested exercises and activities?
6. How personalized are the lifestyle guidance recommendations? Are they tailored to the individual's specific needs, goals, and abilities?
7. Are there any potential disadvantages or limitations to choosing water over sugary drinks?
8. How long do these visits typically last? Is there a standard duration for each appointment?
9. Are there any costs associated with these visits or lifestyle guidance services?
10. Is there any additional support or resources provided to help individuals maintain an active lifestyle outside of the visits?

**List and briefly describe attractive new or innovative products, services, experiences, or policies for this segment:**

1. Interactive Exercise Apps: Develop an engaging and interactive exercise app that not only tracks physical activity but also provides personalized workout suggestions and motivation. This app could include gamification elements to make exercising fun and exciting.
2. Telehealth Check-ups: Introduce remote telehealth check-ups where doctors can virtually examine patients' eyes, ears, and mouth using advanced imaging technology. This allows for more convenient and efficient healthcare access, especially for individuals in remote areas.
3. Virtual Lifestyle Coaching: Offer virtual lifestyle coaching sessions with certified professionals who can provide tailor-made guidance on diet, exercise, and overall wellness. These sessions can be conducted via video calls or through interactive workshops, ensuring personalized attention and education.

4. Active Family Programs: Create programs that encourage families to engage in active and healthy lifestyles together. These programs could include activities such as group workouts, outdoor adventures, and nutritional education, promoting the importance of staying active as a family unit.
5. Smart Water Bottles: Develop smart water bottles that track an individual's water intake and send reminders to drink water at regular intervals. These bottles can also connect to health apps, providing comprehensive data on hydration levels and encouraging users to choose water over sugary beverages.
6. Virtual Reality Fitness Experiences: Design virtual reality fitness experiences that transport users to different interactive environments, making exercise more engaging and exciting. These experiences can include guided workouts, sports simulations, and interactive challenges.
7. Personalized Nutritional Supplements: Create personalized nutritional supplements that are tailored to meet individual needs based on factors such as age, sex, and activity level. These supplements can provide the necessary vitamins, minerals, and antioxidants required to support an active lifestyle.
8. Workplace Wellness Programs: Introduce workplace wellness programs that promote physical activity and encourage healthy habits among employees. These programs can include initiatives such as on-site fitness classes, healthy cafeteria options, and incentives for meeting activity goals.
9. Outdoor Fitness Parks: Build outdoor fitness parks equipped with innovative exercise equipment that caters to people of all ages and fitness levels. These parks can offer a variety of equipment for cardio, strength training, and flexibility exercises, providing accessible and enjoyable workout opportunities.
10. Healthy Rewards Programs: Implement healthy rewards programs that incentivize individuals to make healthy lifestyle choices. These programs can offer discounts, rewards, or exclusive access to fitness events, creating motivation and fostering a sense of accomplishment in staying active.

#### Which messages will interest this segment?

The segment is likely interested in the following messages:

- Importance of staying active: They are interested in learning about how much exercise they should be doing and why it is important for their overall health.
- Eye, ear, and mouth health: They are interested in understanding how doctors can check the health of their eyes, ears, and mouth during visits.
- Healthy food choices: They are interested in receiving guidance from doctors about what foods are good for their health.
- Exercise recommendations: They are interested in learning about different exercises, such as running or playing sports, that can make them stronger.
- Fun activities to stay active: They are interested in learning about enjoyable activities like jumping rope or biking that can help them stay active.
- Benefits of choosing water over sugary drinks: They are interested in understanding why it is better for their body to choose water over sugary drinks and how it can improve their health.

The same approach was used for AI summarization of the results for each key subgroup of respondents. The summarization was done only for the elements with coefficients 21+ for positive variables (e.g., R54=motivates), and only for elements 15+ for negative variables (e.g., R21=does not motivate). When no element satisfied the threshold value the summarization was not done.

Table 10 presents the AI summarization for the strong performing elements for the three mind-sets, computed for the dependent variable R54. The AI summarization becomes a way for the researcher to better understand the results and perhaps the patterns emerging from the aspects and commonalities of winning elements.

## Discussion and Conclusions

Although one may often believe that years of experience with patients provides a strong sense of 'what to say' to each individual patient, the reality is that the proper communication with patients is necessary, but rarely well understood, and may require far more experience and guidance/coaching than might commonly be thought. Colloquially, some of this is encapsulated in what is colloquially called the 'bedside manner', but such a simple catch-all phrase can hardly do justice to the complexities presented in the visit of a patient with a doctor.. The literature about 'what patients want from doctors' recognizes the lack of deep information that is readily at the hands of the practitioner, can be sensed from some of these quotes from the public academic literature.

*Although much has been written about what patients Then they contact their general practitioner (GP), there are no published data from large cohort studies of what patients expect..... most patients come to the consultation with a particular agenda. Failure to address this agenda is likely to adversely affect the outcome of many consultations [11].*

*The results showed that people 'preferred' the explanations based on what the participants in the earlier study wanted to know about their*

*medicines, rather than those based on what the doctors thought they should be told. They also 'preferred' the explanations that did not convey negative information, rather than those that did convey some negative information. In addition, the inclusion of negative information affected ratings of likely compliance with the prescribed medication [12].*

Most of the expectations in qualitative studies were related to the function "Fostering the relationship". Similar expectations arose less often in quantitative studies. Conclusions Patients do have concrete expectations regarding each of the functions to be met in the medical encounters. The research approach tends to bias the results. Practice implications the collected expectations suggest how physicians may perform each of their tasks according to the patient perspective. Future research on patients' communicative expectations needs to overcome the gap between qualitative and quantitative findings [13].

*Patients want many things from their doctors, not all of which are possible. Below, however, is a list of things that patients seem to want from their doctor, and which should be possible. ....Eye contact... [14].*

The study presented here is among the first to deal with the use of Mind Genomics to explore in detail the description of the interaction between the medical professional and the prospective patient. Mind Genomics provides the opportunity to describe the different facet of the doctor patient relationship in various conditions, with the descriptions emerging from the combination of AI (Idea Coach) and the doctor as co-generators of ideas, and the response of real people to these descriptions.

The ability to do these research projects with hours and days, from the generation of the topic to the creation of the study and finally to study execution and detailed analysis, promises to create a new corpus of knowledge about the world of everyday health and illness from the point of view of how a person perceives that world. The use of ordinary language, the ability of Mind Genomics to prevent guessing,

the objectivity of the study was conducted on a computer, and finally the use of clustering to find mind-sets and typing tools to assign mind-sets, all promise a database of knowledge, at least interesting even if not eventually transformative.

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