Review Article

# In Search of a Better Doctor Visit: A Mind Genomics Exploration

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## Abstract

This paper explores the messaging about a doctor visit from the perspective of survey takers (respondents) acting as prospective patients. Respondents evaluated systematically varied vignettes, combinations of messages about a visit to the doctor. The elements were developed using artificial intelligence embedded in the BimiLeap program. Respondents each evaluated 24 unique vignettes comprising systematically varied combinations of the messages. Each vignette presented 2-4 messages, combined according to a main- effects permuted experimental design. Based upon the response to the vignettes about a 'visit to the doctor's office,' regression and cluster analyses revealed three different-sets of prospective and current patients (*Patient Mind-Set 1: Focus on connection with the doctor after the visit; Patient Mind-Set 2 – Doctor is attentive to my needs and involves me; Patient Mind-Set 3 – Visit ends with what specifically to do..*) The Mind Genomics approach presented in this paper can be used to educate medical professionals about what they believe patients want and what patients actually want regarding the visit to their health care office.

## Introduction

A search through the academic literature reveals what many practitioners and patients already know, namely that the patient-facing system today is 'broken', or at least can be optimized. One need only read the titles of papers to get a sense of the massive dissatisfaction, both from the viewpoint of the patient books detailing the issues, but perhaps a more productive solution is to find out what patients need and want from the point of view of human interaction. The clinical issues are best left to the experts, but what about the issues of patient experience? [1-4].

In today's climate of hyper measurement, of everything, the patient experience is measured with an almost religious fervor. Following most visits, one receives the now-expected follow-up survey of the experience (e.g., Press-Ganey, Siegrist, 2013) [5]. No patient visit is left unexamined, as the patient is warned to expect a follow-up satisfaction survey and requested to be sure to uprate the scores for the experience if at all possible. Survey after survey, whether from a survey professional or from the office of the practitioner show remarkably similar structure, namely rating general statements about the experience on some type of point scale, along with questions about recommendations. These general surveys continue to show a decreasing satisfaction with the interaction with the doctor in the office, a trend that people may talk about in casual conversation but has now become a topic in the world of professional medicine [6]. Some of the issues may be individual differences, with doctors and nurses varying in their so-called bedside manner. Those differences are built into the system. People behave the way they behave. They may be taught some ways around their behavioral shortcomings once these shortcomings are identified, but the people may take years to really improve their behaviors. The other issue is the change in the economics, with insurance companies and venture capital using the medical system to optimize financial yield by treating the visit with the patient as a product whose 'financials' are to be optimized as if optimizing the production of any item to be sold to customers.

**Exploring Granular Thinking about the Visit to the Doctor through Mind Genomics**

Over the past forty years an alternative way of thinking about measuring experience has emerged, the origins of which go back to the pioneering work of functional measurement, and the foundations of mathematical psychology embodied in conjoint measurement. The common property here is to present respondents with combinations of alternatives and get their ratings of these alternatives or their choices. The subsequent mathematical analysis relating the choices or ratings to the composition of the test combinations reveals the underlying strength of the individual options or elements. The rationale for this approach comes from the realization that people react to stories, to vignettes of experience, not to single statements. It is more ecologically valid to present 'small stories' to be judged, and in turn identifying 'what' in the stories drives the reaction of the person judging the stories. It is from this worldview that Mind Genomics evolved, as an attempt to explore the granularity of experience in a way that does not allow the respondent to 'game' the system [7,8].

Mind Genomics evolved from this pioneering work, focusing on simple, DIY (do it y 0urself) templates, and automated analyses Underlying the DIY template is a carefully structured path which

ensures that the data emerging from the Mind Genomics study will be statistically correct, even to the level of an individual respondent. The Mind Genomics approach has been used for many different types of problems, ranging from medical to legal, ethics, consumer products, social issues and education. The approach is similar for virtually all of the studies, with the exception of the specific elements or messages, and the underlying experimental design. The specific steps for the Mind Genomics studies have been presented in various papers. The approach followed in those papers will be one used here, with slight variations, such as the use of regression modeling without an additive constant, a change which makes the data easier to understand [9-11].

This study focuses on the application of the Mind Genomics approach to the issue of what do patients want in the sessions with their doctors, and in turn what do doctors, nurses, and senior medical students feel they want in their interaction with the patient.

## The Mind Genomics World View

When one thinks about the mind of the patient regarding the session with a doctor, or vice versa, the mind of a doctor or other health professional thinking about the session with a patient, the topic at first seems easy, almost self-evident. There is an almost instinctive positive or negative reaction when patients describe their experiences with doctors, a reaction that can range from rapturous to disillusioned. A lot of it is emotion, with the catch-all phrase of bed-side manner summarizing a great deal of the feelings about the experience, even when the meeting occur at an appointment rather than at the bedside of a sick person [12]. The important thing to note is the reality that for most patients the doctor or nurse is the professional with whom they will interact, from whom they may get good news or less fortunately, bad news. Whether the doctor is proficient or not may be relevant and can be determined from reviews and from talking to one's friends, but the immediate situation is one of emotion. The emotional tension may be mild, such as the visit to the doctor's office for a routine physical, or the emotional tension may be significant as in the case of the doctor calling the patient to come in talk about some issues which have just surfaced for the patient.

At the end of the visit, the patient is often asked to complete a survey about responses to the visit. Press-Ganey surveys are well known in this regard [13], although patients may be asked to fill out any of many different 'home-grown' surveys, devised by the staff of the specific medical practice. T the typical survey might end up having the patient rate the doctor's behavior at the visit, perhaps doing so with one overall rating or perhaps dimensionalizing the visit into such direct issues as the rating of promptness, explanation of the situation, the amount of time spent with the doctor, and so forth. These numbers are tabulated and produced into a report profiling the visit as a series of scaled responses, like a report card, albeit one with more emotion but perhaps absence of soul anyway.

The foregoing approach allows the researcher to cover many topics, but in superficial terms only. In the effort to capture as many aspects as possible about the visit of patient and health professional, the researcher ends up giving each topic short shrift, usually covering the topic by one general question or perhaps two or three general questions. There is usually none of the richness of language to capture the experience, and the feeling about such experience.

It is at this point that Mind Genomics departs from the conventional methods. Mind Genomics presents vignettes, combinations of messages, to the respondent, and instructs the respondent to rate the feeling about the vignette. The respondent is not asked to be analytical, but simply to rate the feeling on a scale. The respondent ends up rating a set of these vignettes, combinations of messages, with each vignette comprising a minimum of two and a maximum of four elements. The vignettes are simple to read, convey detailed information, and simply require the respondent to scan them and assign a rating. From the evaluation of 24 such vignettes, each rated by a respondent, the researcher can assemble a profile of how each of test phrases (16 of them) drive the respondent's feelings. The respondent feels that she or he is guessing, but nothing can be further from the truth. Each set of 24 vignettes evaluated by a respondent differs in combination from every other set of 24 vignettes. Underneath the combinations is a carefully designed layout, the experimental design, which puts these combinations together in a structured manner, allowing the respondent to react to a compound description, but with the ability to tease out the contribution of each element of the vignette. Often the survey-taker's response is that the interview seemed jumbled, the elements seemed randomly combined, and instead of trying to answer honestly (another way for saying 'giving the correct response'), survey-taker confesses that she or he simply guessed.

The analysis of the results provides a deep snapshot of how the respondent feels about the elements. The system cannot be gamed. The ability to probe a topic deeply rather than superficially means that it is now possible to deeply understand the topic. The data make a great deal of sense as will be shown below. Almost always, faced with 24 seemingly random combinations of messages about a topic, the respondent feels she or he gives up trying to guess and simply assigns a rating which seems 'correct.' It is that level of focus, the same level that economic psychologists Daniel Kahneman calls 'System 1' [14].

Mind Genomics data are deconstructed into the contribution of the different messages. The story is in the pattern of coefficients from models or equations relating the presence/absence of elements the messages, the response. These coefficients emerge from regression. The pattern of coefficients often points to different groups of people, the differences now coming from who they are but from how they think about the specific topic. These are the mind-sets, the desired information emerging from the study of the granular experience.

## Setting Up the Study on the Mind Genomics Platform

To illustrate the approach of Mind Genomics we present a study on what low-income respondents feel they want from a visit with the doctor. Thus, the Mind Genomics projects here are done in the spirit of patient satisfaction studies (e.g., like Press Ganey survey), or the very many after-the-fact customer satisfaction surveys which try to dimensionalized the experience with the professional, the sales representative, or the help desk..

The study was suggested by a constant topic surfaced in the daily online, world-wide meeting among clinicians and allied parties, the Global Population Health Management Forum. A continuing theme

of the FORUM is the recognition that people feel shortchanged by the current medical care system, especially in the United States, but increasing in other countries. These feelings about 'shortchange' actually came from the doctors themselves and were supported by both medical literature [15], and by popular literature and advertisement.

Figures 1-4 show the steps of the process represented by screen shots. Figure 1, Panel A show the first screen, requiring the respondent to assign the study a name, to select the language of the prompts (e.g., English, Chinese, etc.), and to agree not to request personal information unless specifically agreed to by the survey taker before the start of the study.

Figure 1 Panel B shows introduction to the AI-powered Idea Coach. Often the researcher is unable to formulate questions. This inability to formulate a string of questions is increasingly common because it requires critical and structured thinking. During the years 20222-2023 the emergence of easily available AI in the form of Chat GPT allowed for the Mind Genomics program to incorporate a system to suggest questions, based upon the input of the researcher. These questions are suggestions for discussion, and not meant to be informational. They teach about the topic by presenting different questions that the researcher can ask. The Idea Coach can be accessed

dozens of times until the researcher has discovered the four questions that are of greatest promise. Each use of the Idea Coach generates 15 questions. With many uses of Idea Coach for the same 'squib' or problem description, Idea Coach will produce a number of different questions, but some questions will repeat.

Figure 1 Panel C shows a set of questions produced by AI through Idea Coach. To reinforce the spirit of experimentation and inquiry and to reduce the fear of asking question, the Idea Coach can be re-interrogated as many times as desired. After a while the same questions will appear. The different suggestions for questions from Idea Coach will be stored for subsequent analysis and returned to the researcher in a comprehensive package called the 'Idea Book'. The Idea Book is separate from the study, set up as a document to help learning.

Figure 1 Panel D shows the final four questions selected by the researchers with the aid of AI (Idea Coach), but with the language edited by the researcher to make the question easier to understand. Figure 2, Panel A shows the output of one run of Idea Coach to select answers for question A (How do you want to spend your visit with the doctor). Each iteration of the Idea Coach to provide answers to the questions will generate 15 answers. As in the case of generating questions, generating answers will produce both new answers and repeats.
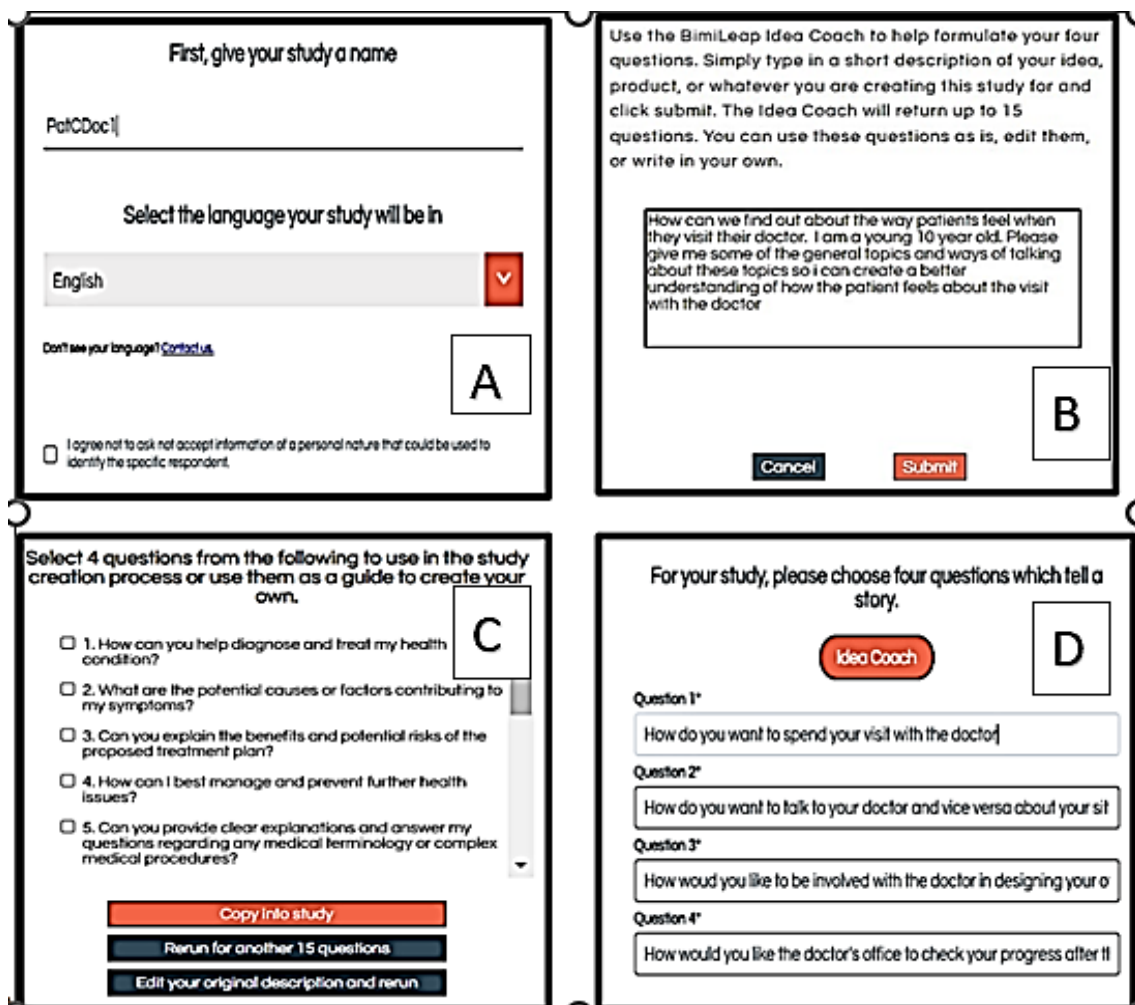


**Figure 1:** The first part of the set-up for the study, using a templated system and AI (Idea Coach) to suggest questions.

## A

Select 4 answers from the following to use in the study creation process or use them as a guide to create your own.

☐ 1. Discuss any current health concerns or symptoms I may be experiencing.

☐ 2. Request a general check-up to evaluate my overall health and well-being.

☐ 3. Seek advice on maintaining a healthy lifestyle, including diet and exercise recommendations.

☐ 4. Review and update any medications or prescriptions I may be taking.

☐ 5. Discuss any upcoming medical procedures or surgeries.

☐ 6. Ask for clarification or more information about a particular diagnosis or condition.

☐ 7. Request recommendations for specialists or further

Copy into study

Rerun for another 15 answers

## B

QUESTION 1/4: HOW DO YOU WANT TO SPEND YOUR VISIT WITH THE DOCTOR

Now choose four answers to this first question. Make the answers simple. Try to paint a picture with your words in the mind of the respondent.

Idea Coach

Answer 1
My Visit: Receive preventive care advice and recommendations.

Answer 2
My Visit: Ask questions about any health-related topics or conditions

Answer 3
My Visit: Seek guidance on managing stress or improving mental we

Answer 4
My Visit: Develop a personalized health plan or goals for the future.

## C

CLASSIFICATION QUESTION 1

Along with being asked for age and gender, you can ask your respondents an additional question before they begin the study. You can ask up to 8 classification questions and offer up to 8 answers for each (only 2 answer are required.)

How do you typically go about seeing you doctor

I have a fixed schedule, several times a year, whether there is a prob

Once a year for my general checkup

When I don't feel well

When I don't feel well and others push me to see the doctor

When I read about disease outbreaks

Once every couple of years to get myself 'checked'

I don't go enough... I don't know .. the time slips by

Really have no idea

## D

RATING SCALE

Please type the question that you would like your respondents to answer.

How do you feel about this medical practitioner taking care of you

The lowest value is 1, choose the highest scale value:        5

You must fill in #1 and #5. You have an option of defining the numbers in between but it's not required.

| | |
|---|---|
| What does 1 mean on the scale? | Not for me .... AND negative g |
| What does 2 mean on the scale? | Not for me ... Even though por |
| What does 3 mean on the scale? | Can't decide |
| What does 4 mean on the scale? | For Me... Even though negativ |
| What does 5 mean on the scale? | For Me... AND positive gut fee |

**Figure 2:** Creating the answers, the self-profiling classification question(s), and the rating scale.

## A

OPEN ENDED QUESTION

You have the option to add a question for participants to answer at the end of the survey.

Normal    ⬦    B  I  %

Now that you have had a chance to think about medical practioner, describe how a really good interaction with y medical provider would sound like.

Write three sentences please ... at least. Give us a sense of YOU. This will help YOU change medicine in the next five years. But only if you tell us what you would like to experience.

## B

FINAL THOUGHTS

Now that you have created your study, tell us more about why you created it.

We are trying to determine how to match patients and doctors. This is our first effort. We are going to do this study with patients. And then we are going to do the same study, this time with practioners.

Please enter some keywords to associate with your study.

New keyword                                    Add

🔖  Medical

**Figure 3:** The opened-ended question and the final thoughts about the study as written by the researcher.

Thank you for participating. Please answer the following questions about yourself. This information will only be used for this study, and will not be given to any marketers for sales purposes.

Age — Choose ▾ — *Required Field

What year were you born? — I.e. 1948 — *Required Field

Gender identification — Choose ▾ — *Required Field

How do you typically go about seeing you doctor — Choose ▾ — *Required Field

What bothers you most about going to the doctor — Choose ▾ — *Required Field

What kind of doctor do you trust most — Choose ▾ — *Required Field

How do you know a doctor or clinic is a 'keeper'...For YOU!! — Choose ▾ — *Required Field

What would make you stop going to your medical provider — Choose ▾ — *Required Field

How do you get to your health care — Choose ▾ — *Required Field

I understand that the information I give will not be used to identify who I am, nor will I be asked to provide private information which can identify me — ☐ — *Required Field

Next

**Figure 4:** The self-profiling questionnaire page.

Figure 2, Panel B shows the four answers that were accepted by the researcher. As was the case for the generation of questions, the idea Coach returns with a mix of previously used answers and new answers. Once again the researcher can modify the answer and may return to the question section to modify the language of the question.

Figure 2, Panel C shows the self-profiling question, set up so that the researcher can find out more detailed information about who the survey taker is, what the survey taker thinks, and what the survey taker does. The language in Panel C for eight questions is left to the researcher. The two remaining questions are age and gender.

Figure 2, Panel D shows the rating question that will be used by the respondent, who in the course of the study will evaluate 24 vignettes, created by combining answers together. For right now, it is only important to keep in mind that the scale has a minimum number of points (five), and that the scale has two dimensions, first For Me vs Not For Me, and then Positive Gut Feel vs Negative Gut Feel. In this way the study generates a deeper picture of how the survey taker feels. Figure 3 shows final thoughts and the open-ended questions.

Figure 3 (Panel A) shows the box where the respondent. Figure 3B shows the box where the researcher can record the purpose of the study. The researcher is required to write something in this box. The rationale is that the BimiLeap system is used for teaching as well as

for exploring real situations. As such, it is a good idea for the person designing the study to record the rationale. The study is also meant to be searchable on a big database, requiring that the researcher select key worlds.

The respondent experience begins with the greeting to the respondent, and then the self-profiling questionnaire as shown in Figure 4. The questions were created at the set-up time (see Figure 2, Panel C). To make the introduction less daunting, the BimiLeap program presents the questions in one page, but the answers in pull-down form. The respondent provides the necessary information, including the agreement not to provide any information that would identify the respondent. For those cases where it is necessary to know who the respondent actually is, the study must be augmented by permission forms. Otherwise, the default is total privacy.

Figure 5 shows the vignette as it looks on a PC. The vignette presented to the respondent is a stark collection of phrases, put into the different groups as answers to questions. The vignette shows only the answers, not the questions. The layout of the vignette throws information at the respondent in what must seem like a 'blooming, buzzing confusion' in the words of Harvard psychologist William James when asked to describe the perceptual world of the newborn baby. Despite the stark appearance, the vignette is effective as a means

How do you feel about this medical practitioner taking care of you

1 = Not for me ..... AND negative gut feel

2 = Not for me ... Even though positive gut feel

3 = Can't decide

4 = For Me... Even though negative gut feelt

5 = IFor Me... AND positive gut feel

My Doctor: Takes the time to listen to my concerns ... answers any questions I may have.

My Doctor: Cinsiders my preferences and values when developing a treatment plan.

Visit Follow up: I get an e-mail with a link to an online progress survey.
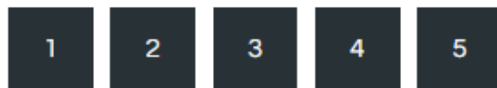
| 1 | 2 | 3 | 4 | 5 |

**Figure 5:** Example of a vignette as it looks on a PC. Each respondent evaluated a unique set of 24 such vignettes.

to throw information at the respondent in a way which allows them to 'graze', to pick up information quickly, rate the vignette, and move on to the next. After 24 vignettes the respondent does not feel 'drained' by having had to read an enormous amount of prose. The sheer starkness of the layout allows the researcher to move quickly through the vignettes, rather than being caught in the quicksand of too much verbiage.

The actual combinations of elements (vignettes) are prescribed by an underlying experimental design. The experimental design was developed in a fashion which allows each respondent to evaluate a unique set of 24 vignettes. Each vignette has a minimum of two elements, and a maximum of four elements. The elements are answers to the questions. A vignette never contains more than one answer from a question, but many vignettes are absent from one question or absent from two questions, respectively. Finally, the experimental design is created so that each respondent ends up evaluating an isomorphic experimental design, viz., the same mathematical design but with different combinations. This is called an isomorphic permuted design [16].

**How Low-income Respondents in New York Design Their Visit to the Doctor**

This study focused on the design of a visit to the doctor by the patient. The respondents were chosen to be low-income individuals. The respondents were provided by a Mind Genomics vendor specializing in on-line survey-takers. The vendor, Luc.id Inc., provides totally anonymized respondents who fit the above-mentioned criteria (Table 1).

Each respondent evaluated a full set of vignettes, as structured by the underlying experimental design. To reinforce the point made above, each respondent evaluated a totally different combination of vignettes. The ratings on the 5-point scale were transformed to a binary scale. Ratings of 5 and 4 (For Me) were transformed to 100, ratings of 3, 2 and 1 were transformed to 0. The conversion of a Likert scale to a simple binary scale makes the results easier to communicate.

After the transformation, the data from each self-defined group was subject to an OLS (ordinary lease-squares) regression. The regression is expressed by the statement: Top2 = k1(A1) + k2(A2)… K16(D4). The coefficients tell us the additive percent of respondents who will rate the vignettes 5 or 4 (viz., 'Me') when the vignette contains the specific element.

Often researchers and respondents feel that the evaluation of vignettes complicates an otherwise easy task. Table 2 shows the strong performing coefficients across the 16 elements, and all of the subgroups. There are no clear patterns across groups, a situation which typically appears in Mind Genomics studies when the focus is on clearly different groups, but when there is no method for understanding the deep differences in the way of thinking. The clear patterns will emerge from mind-set segmentation, shown in the next section.

**Mind-Sets in the Population**

Mind Genomics was developed as a response to the psychophysics of the 1950's and 1960's, which searched for invariance, for the 'one' or 'correct' relation between physical stimulus level and subjective response. Psychophysicists typically work with well-defined physical stimuli, such as tones of varying sound pressure levels, weights of varying mass, circles of different areas, or money of various amounts. The standard approach espoused by Harvard psychophysicist, S Smith Stevens was to present unpracticed respondents with stimuli of various magnitudes, instruct the respondents to rate the perceived intensity, and then plot the relation between the number assigned (so-called magnitude estimate) and the physical magnitude [17]. The relation conformed to a power equation pf the form Rating = k(Physical Magnitude)$^n$. The exponent n becomes the slope when the

**Table 1:** Specifics for study 1 (Low-income respondents design visit to doctor).

| |
|---|
| 1. Study Title PatCDoc1 |
| 2.Identification Number of the study: 06292023.PatCDo |
| 3. Date when the study was run: (06/29/2023-07/02/2023) |
| 4. Number of respondents:100 |
| 5. Purpose of the study: We are trying to determine how to match patients and doctors. This is our first effort. We are going to do this study with patients. And then we are going to do the same study, next time with practitioners. |
| 6. Keywords: Medical |
| 7.Question and Rating ScalePlease read each vignette and tell us how you feel<br>Rating scale<br>How do you feel about this medical practitioner taking care of you<br>1=Not for me ..... AND negative gut feel<br>2=Not for me ... Even though positive gut feel<br>3=Can't decide<br>4=For Me... Even though negative gut feel<br>5=For Me... AND positive gut feel |
| 8. How do you typically go about seeing your doctor Choose one<br>1=I have a fixed schedule, several times a year, whether there is a problem or not<br>2=Once a year for my general checkup<br>3=When i don't feel well<br>4=When I don't feel well, and others push me to see the doctor<br>5=When i read about disease outbreaks<br>6=Once every couple of years to get myself 'checked'<br>7=I don't go enough... i don't know .. the time slips by<br>8=Really have no idea |
| 9. What bothers you most about going to the doctor Choose one<br>1=It takes up part of my day<br>2=It's tough to get there<br>3=Frankly, I'm scared of what i might discover..<br>4=The appointments are too long in the future<br>5=Just the effort to make the call and feel it's a factory |
| 10. What kind of doctor do you trust most Choose one<br>1=Someone a lot older than me who has been around<br>2=A bright person who is up to date on the best in medicine<br>3=Someone I know or who has been highly recommended<br>4=A smart guy doctor who has a warm personality<br>5=A smart woman doctor who has a strong competence<br>6=A doctor who has published and is well known<br>7=A doctor who is really willing to give me time and doesn't rush .. really cares |
| 11. How do you know a doctor or clinic is a 'keeper'...For YOU!! Choose one<br>1=They know what they are doing<br>2=My friends recommended<br>3=I read about them in a magazine<br>4=It's the word in the community<br>5=They are similar to me in background, beliefs, from my land<br>6=They were recommended by other professionals<br>7=I just feel that they care about me<br>8=My family recommended |
| 12. What would make you stop going to your medical provider Choose 1<br>1=Not in my health plan<br>2=Doctor is retiring or leaving<br>3=Nurse is retiring or leaving<br>4=Staff treat me like a number. No warmth<br>5=I'm not getting healthier<br>6=I just feel like I'm part of an assembly line - in and out<br>7=I moved away and its inconvenient<br>8=I want to explore other health organizations. There may be something better |
| 13. How do you get to your health care Choose one<br>1=I go myself by public transportation<br>2=I go with a caregiver<br>3=A family member takes me<br>4=I go by cab, or uber<br>5=I go by Medi Bus, or community provided transportation<br>6=I usually do telehealth |

**Table 2:** High scoring elements for the rating of 'Fits Me'. Coefficients of 21 and above are shaded

| | Total | Male | Female | 25-34 | 35-44 | 45-54 | 55-64 | I have a fixed schedule, several times a year | Once a year for my general checkup | When i don't feel well | I go myself by public transportation | A family member takes me | Someone a lot older than me who has been around | A bright person who is up to date on the best in medicine | Someone I know or who has been highly recommended |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| What respondents want from a visit to their doctor (Rating 5,4 100, Rating 1,2,3 0) Respondents are individuals in the New York City area, with incomes < $40,000/year | | | | | | | | | | | | | | | |
| Base Size | 100 | 25 | 75 | 28 | 33 | 20 | 13 | 37 | 22 | 25 | 49 | 28 | 15 | 31 | 17 |
| | | Gender | | Age | | | | When do you go to your doctor | | | Get to provider | | What kind of doctor do you trust most | | |
| **Question A: How do you want to spend your visit with the doctor** | | | | | | | | | | | | | | | |
| A1 My Visit: Receive preventive care advice and recommendations. | | 23 | | | 23 | | 24 | | 24 | 24 | | | | | 22 |
| A2 My Visit: Ask questions about any health-related topics or conditions I'm curious about. | | 21 | | | 22 | | 25 | | 25 | 21 | | | | | 22 |
| A3 My Visit: Seek guidance on managing stress or improving mental well-being. | | | 21 | | 25 | | 28 | | 24 | 22 | | | 22 | | 22 | 25 |
| A4 My Visit: Develop a personalized health plan or goals for the future. | | | | | | | 30 | | 24 | | | 21 | | | 22 |
| **Question B: How do you want to talk to your doctor and vice versa about your situation discussing your condition, or would you like them to use simpler language that is easier to understand?** | | | | | | | | | | | | | | | |
| B1 My Doctor: Explains using simple and easy-to-understand language. | | 24 | | | 23 | | 23 | 26 | | | | 22 | | | 26 |
| B2 My Doctor: Explains using understandable medical terminology when discussing my condition. | | 22 | | | 24 | | 22 | 23 | | 27 | 25 | 21 | | | |
| B3 My Doctor: Uses visual aids or diagrams to help explain my condition if applicable. | | 25 | | | | 23 | 27 | 24 | 21 | | 24 | | | 28 | 21 |
| B4 My Doctor: Takes the time to listen to my concerns … answers any questions I may have. | 22 | 25 | | 24 | | 26 | 24 | | | 24 | 28 | 21 | 21 | 27 | |
| **Question C: How would you like to be involved with the doctor in designing your own health care and involve you in the decision-making process when it comes to your treatment plan?** | | | | | | | | | | | | | | | |
| C1 My Doctor: Explains the pros and cons of different treatment options and involve me in the decision-making process. | | | | | | 24 | 25 | | 21 | | | | | 24 | 22 |
| C2 My Doctor: Considers my preferences and values when developing a treatment plan. | | 23 | | | | 26 | 26 | | 24 | | | 21 | 22 | | |
| C3 My Doctor: Offers regular follow-up appointments to discuss my progress and make necessary adjustments to my treatment plan. | | 24 | | | | | 30 | | 21 | | | | | | 21 |
| C4 My Doctor:: Asks me for feedback and satisfaction with treatment plan. | | 23 | | | | | 23 | | | | | | | | 32 |
| **Question D: How would you like the doctor's office to check your progress after the office visit** | | | | | | | | | | | | | | | |
| D1 Visit Follow up: I get an e-mail with a link to an online progress survey. | | | | | | 21 | | | 22 | | | | 27 | | |
| D2 Visit Follow up: I get a text message asking about any changes or improvements. | | | | | | | | | 22 | | | | | | |

| Code | Element | Total | It takes up part of my day | It's tough to get there | Frankly, I'm scared what i might discover. | The appointments are too long in the future | A doctor who is really willing to give me time and doesn't rush .. really cares | They know what they are doing | I read about them in a magazine | They were recommended by other professionals | I just feel that they care about me | Not in my health plan | Doctor is retiring or leaving | Staff treat me like a number. No warmth | I just feel like I'm part of an assembly line - in and out |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D3 | Visit Follow up: I use a mobile health tracking app to monitor my progress. | | 21 | | | | | | | | 28 | | | 28 | |
| D4 | Visit Follow up: I get a call from nurse to discuss any updates on my progress. | | | | | | 25 | 21 | 30 | | | | | 28 | |
| | What respondents want from a visit to their doctor (Rating 5,4 →100, Rating 1,2,3 → 0) Respondents are individuals in the New York City area, with incomes <$40,000/year) | | | | | | | | | | | | | | |
| | Base Size | 100 | 34 | 13 | 28 | 16 | 24 | 41 | 10 | 10 | 21 | 25 | 22 | 17 | 11 |
| | | | What bothers you most about going to the doctor | | | | How do you know a doctor or clinic is a 'keeper'...For YOU!! | | | | | What would make you stop going to your medical provider | | | |
| Question A: How do you want to spend your visit with the doctor | | | | | | | | | | | | | | | |
| A1 | My Visit: Receive preventive care advice and recommendations. | | | 31 | 23 | | | 22 | | 23 | | | | 21 | |
| A2 | My Visit: Ask questions about any health-related topics or conditions I'm curious about. | | | | 28 | 25 | | | | 23 | | | | 21 | |
| A3 | My Visit: Seek guidance on managing stress or improving mental well-being. | | | 26 | 27 | 25 | | 23 | | 26 | | 22 | | 28 | |
| A4 | My Visit: Develop a personalized health plan or goals for the future. | | | | | | | | | | 22 | | | 22 | |
| Question B: How do you want to talk to your doctor and vice versa about your situation discussing your condition, or would you like them to use simpler language that is easier to understand? | | | | | | | | | | | | | | | |
| B1 | My Doctor: Explains using simple and easy-to-understand language. | | 25 | | 24 | | | | | 26 | | | 29 | | 21 |
| B2 | My Doctor: Explains using understandable medical terminology when discussing my condition. | | 25 | 26 | | | 21 | 23 | | 23 | 21 | 22 | 26 | | |
| B3 | My Doctor: Uses visual aids or diagrams to help explain my condition if applicable. | | 28 | | 24 | | | 23 | | 23 | | 23 | 23 | | |
| B4 | My Doctor: Takes the time to listen to my concerns ... answers any questions I may have. | 22 | 27 | 24 | 24 | 21 | 27 | | | 23 | | | 21 | 25 | |
| Question C: How would you like to be involved with the doctor in designing your own health care and involve you in the decision-making process when it comes to your treatment plan? | | | | | | | | | | | | | | | |
| C1 | My Doctor: Explains the pros and cons of different treatment options and involve me in the decision-making process. | | | | 21 | | | | | 23 | | | | | |
| C2 | My Doctor: Considers my preferences and values when developing a treatment plan. | | | 23 | 23 | | | | | 22 | | | | | |
| C3 | My Doctor: Offers regular follow-up appointments to discuss my progress and make necessary adjustments to my treatment plan. | | | 28 | | | | | | 22 | | | | | |
| C4 | My Doctor:: Asks me for feedback and satisfaction with treatment plan. | | | | | | | | | 21 | | | | | |
| Question D: How would you like the doctor's office to check your progress after the office visit | | | | | | | | | | | | | | | |
| D1 | Visit Follow up: I get an e-mail with a link to an online progress survey. | | 21 | | | | 21 | | | | | | 27 | | |
| D2 | Visit Follow up: I get a text message asking about any changes or improvements. | | | | | | | | | 23 | | | | | |
| D3 | Visit Follow up: I use a mobile health tracking app to monitor my progress. | | 23 | | | | 21 | | | | | | 21 | 21 | |
| D4 | Visit Follow up: I get a call from nurse to | 21 | 22 | | 22 | | 23 | | | 25 | | 24 | 24 | 25 | |
| | discuss any updates on my progress. | | | | | | | | | | | | | | |

foregoing power equation or power function was linearized by being plotted in log-log coordinates, viz. log Rating = log k + n(Log Physical Magnitude). Note that it was within this tradition the author HRM received his PhD with Professor Stevens, in 1969.

The linearizable power function breaks down when the rating is degree of liking. In that case the relation is a curve perhaps like a parabola. There is an optimal level of liking somewhere in the middle stimulus range [18]. Just as important, the optimum point varies across people. The optimal level of liking may be of low intensity, medium intensity or high intensity. One need only think of the addition of sweetener or whitener to coffee/ some people like sweet dark coffee, others like light but non sweet coffee, and so forth.

With the differences in optimal points, one needs to cluster the respondents to identify meaningful, although operationally defined groups, called taste segments. The same thing can be done for the different messages in a Mind Genomics study to identify mid-sets. The thinking is the same; create a measure for each individual showing the pattern of elements which drive interest, and then cluster the respondents based upon similarities these patterns.

The process to develop these segments, not of taste but of thinking, follows a straightforward path, one which does not make any assumptions but rather combines statistical analysis by k-means clustering [19], followed by regression analysis to create the 'mind-set' equations, and then interpretation. The interpretation of the clusters is left to the researcher, with the suggestion that there be as few clusters or 'mind-sets' as possible (parsimony), but with the mind-sets interpretable.

Table 3 shows the coefficients for the mind-sets. The data could have been limited to two mind-sets, but the clustering solution for two mind-sets was unclear. When three mind-sets were extracted the results made more sense. Table 3 shows the strongest performing elements for each mind-set. From time to time an element might perform well in two of the three mind-sets, almost never in three of the three mind-sets.

The three mind-sets are not mutually exclusive, but rather reflect the existence of individuals who stress different aspects of the visit with the doctor or other medical professional.

*Patient Mind-Set 1: Focus on connection with the doctor after the visit*

*Patient Mind-Set 2 – Doctor is attentive to my needs and involves me*

*Patient Mind-Set 3 – Visit ends with what specifically to do.*

During the past several years the emergence of AI, artificial intelligence, has become of increasing interest to researchers. The Mind Genomics program in BimiLeap now incorporates a set of queries for the strong elements of each key subgroup. Table 4 presents the AI 'summarization' of the three mind-sets. The summarization is not meant to replace the human interpretation but rather to highlight some possible patterns that would not have been suspected.

During the past several years the emergence of AI, artificial intelligence, has become of increasing interest to researchers. The Mind Genomics program in BimiLeap now incorporates a set of queries for the strong elements of each key subgroup. Table 4 presents the AI 'summarization' of the three mind-sets. The summarization is not meant to replace the human interpretation but rather to highlight some possible patterns that would not have been suspected.

## From Knowledge to Application: Creating 'Service-Based Products'

As part of the AI 'summarization' by fixed queries about strong performing elements (Table 4), the notion emerged that perhaps armed with the strong performing ideas the AI might be able suggest new innovative products, services, experiences, or policies. Table 5 shows these AI-driven suggestions. It is important to keep in mind that the raw materials for these suggestions are the elements that were found to be most appealing by the mind-sets of actual people, the respondents or survey-takers participating in the study. Whether the suggestions are good or poor, meaningful or meaningless, is not the issue here. Rather, the ease with which the researcher can work with ordinary people to understand in the particulars of the wellness-illness continuum means that one can now use AI to suggest possible solutions to the problem. With a Mind Genomics study taking less than one hour to set up with the Idea Coach, about one-to-three hours to 'field' with a paid panel of survey takers, and about 30 minutes for complete analysis, the potential is here to systematize the array of problems and arrive at prospective solutions that can be tested in the subsequent iterations of the Mind Genomics process, perhaps a day later.

## The PVI (Personal Viewpoint Identifier): Understanding New People through a Short Interview

The final topic of this paper is the creation of a tool to assign people to one of the three mind-sets. The notion of mind-set as a way of looking at the world is clear. What has become increasingly obvious is that people differ from each other in the style that they find most comfortable, whether the situation is buying food, interacting with friends, or even dealing with medical professionals during a visit. The differences are not in the substance of what is discussed, but rather the general style, the types of words, the types of feelings that are conveyed during the interaction. In the world of commerce this is known as the nature of the interaction such as the interaction between a sales prospect and a salesperson [20]. The knowledgeable salesperson adjusts the language and behavior to what is deemed most likely to make the sales prospect be interested in listening and perhaps even buying. In the medical world this sensitivity to how a patient likes to interact with the medical professional is also important. Often in part it is referred to as the doctor's 'bedside manner.'

The next question to apply this knowledge is to recognize how a person wants to be treated in the meeting with the medical professional, e.g., in the doctor's office, in the hospital, even on the phone with telehealth. Is there a way to discover the person's desired 'style of interaction' in a rushed, crowded environment, with say a new and inexperienced, young medical professional, perhaps doing a rotation in a foreign country? In other words, can the Mind Genomics results

**Table 3:** Performance of the 16 coefficients among respondents assigned to the Total Panel and then to one of three mutually exclusive and exhaustive mind-sets. Strong performing elements, coefficients of 21 or higher, are shown in shaded cells.

| What respondents want from a visit to their doctor (Rating 5,4 →100,  Rating 1,2,3 → 0) Respondents are individuals in the New York City area, with incomes <$40,000/year | Total | Mindset 1 of 3 | Mindset 2 of 3 | Mindset 3 of 3 |
|---|---|---|---|---|
| Base (number of respondents in this group) | 100 | 34 | 40 | 26 |
| Patient Mind-Set 1:   Focus on connection with the doctor after the visit | | | | |
| Visit Follow up:  I get a call from nurse to discuss any updates on my progress. | 20 | 26 | 13 | 21 |
| Visit Follow up:  I use a mobile health tracking app to monitor my progress. | 16 | 26 | 10 | 13 |
| My Doctor: Uses visual aids or diagrams to help explain my condition if applicable. | 20 | 25 | 21 | 12 |
| Visit Follow up:  I get an e-mail with a link to an online progress survey. | 16 | 25 | 7 | 14 |
| Visit Follow up:  I get a text message asking about any changes or improvements. | 14 | 23 | 5 | 17 |
| My Doctor: Explains using simple and easy-to-understand language. | 20 | 21 | 19 | 17 |
| Patient Mind-Set 2 – Doctor is attentive to my needs and involves me | | | | |
| My Doctor: Considers my preferences and values when developing a treatment plan. | 18 | 7 | 34 | 8 |
| My Doctor: Offers regular follow-up appointments to discuss my progress and make necessary adjustments to my treatment plan. | 16 | 3 | 31 | 9 |
| My Doctor: Explains the pros and cons of different treatment options and involve me in the decision-making process. | 17 | 9 | 29 | 8 |
| My Doctor::  Asks me for feedback and satisfaction with treatment plan. | 17 | 9 | 28 | 11 |
| My Doctor: Takes the time to listen to my concerns … answers any questions I may have. | 22 | 20 | 23 | 23 |
| My Doctor:  Explains using understandable medical terminology when discussing my condition. | 20 | 20 | 23 | 14 |
| My Visit: Receive preventive care advice and recommendations. | 20 | 11 | 22 | 30 |
| My Doctor: Uses visual aids or diagrams to help explain my condition if applicable. | 20 | 25 | 21 | 12 |
| Patient Mind-Set 3 – Visit ends with what specifically to do | | | | |
| My Visit: Seek guidance on managing stress or improving mental well-being. | 20 | 14 | 17 | 32 |
| My Visit: Receive preventive care advice and recommendations. | 20 | 11 | 22 | 30 |
| My Visit: Develop a personalized health plan or goals for the future. | 18 | 13 | 18 | 27 |
| My Visit: Ask questions about any health-related topics or conditions I'm curious about. | 20 | 20 | 18 | 26 |
| My Doctor: Takes the time to listen to my concerns … answers any questions I may have. | 22 | 20 | 23 | 23 |
| Visit Follow up:  I get a call from nurse to discuss any updates on my progress. | 20 | 26 | 13 | 21 |

be incorporated into an easy-to-use tool, administered in less than a minute, to tell the medical professional the type of interaction that the person might find to be most comfortable. The questions are simply those asked by any consumer researcher, on the web. The analysis of the answers puts the individual into one of the three groups, with the new benefit that the medical professional has a sense of how to interact with the patient because of some new, codified knowledge [21].

During the past three years a great deal of effort has gone into creating a system which allows a person to develop a typing tool, based upon the summary data from the study, data which parallels the numerical results of Table 3, along with the option to provide feedback and recommendations to the user of the tool, and the ability to show a video, as well as obtain additional information from up to four new questions. Table 5 shows the input structure for the PVI, in three sections; names/feedback/rating questions, additional questions to be answered (chosen by the researcher), and the summary data from the three mind-sets used to create the PVI. In turn, Figure 6 shows the PVI as the respondent see it. The left panel shows database questions about the respondent. The right panel shows the six questions. The output ends up being information to the clinician about the style that the respondent finds best, viz., the style preferred by one of the three mind-sets. Thus, the clinician understands the mental 'WHO' in terms of what is relevant at the level of interpersonal behavior, perhaps allowing the clinician to fine tune the interaction to make it smoother [22-26].

## Discussion and Conclusions

As the medical system continues to 'break down', at least in the minds of many medical professions as well as the rank-and-file individuals who are the patients, opportunities exist to improve the system, even without improvement in clinical aspects. The improvements presented in this paper are simple to discover with the Mind Genomics technology and with Idea Coach. The decisions about which improvements are most promising emerge from treating the effort as a conventional market research study. The output of the effort ends up being suggestions for behavior from the Idea Coach, and initial suggestions of promise from work with consumer survey-takers, the respondents in the study. These individuals can be stratified by who the people are (viz. geo-demographics), what the people do, what the people believe. The Mind Genomics technology through

**Table 4:** AI summarization of the strong performing elements for each mind-set by using Chat GPT to identify commonalities among these elements.

| |
|---|
| Mind-Set 1 of 3 |
| Focus on connection with the doctor after the visit |
| Create a label for this segment: Engagement and Communication Focused Group |
| Describe this segment: <br><br> This segment of the research study consists of individuals who value clear and easily understandable communication from their doctors. They appreciate it when their doctors utilize visual aids or diagrams to explain their medical condition, if applicable. In terms of visit follow-ups, this segment prefers receiving an email with a link to an online progress survey. They also find it helpful to receive text messages asking about any changes or improvements. Additionally, they utilize a mobile health tracking app to monitor their progress. Lastly, they appreciate receiving a call from a nurse to discuss any <br><br> updates on their progress. |
| Describe the attractiveness of this segment as a target audience: <br><br> This segment of the target audience can be seen as attractive because they value clear and easy communication. They appreciate doctors who explain things in simple and understandable terms and use visual aids to help them understand their condition better. They also prefer to receive follow-up information via technology, such as email, text messages, and mobile health tracking apps, indicating that they are comfortable and familiar with technology. Additionally, they value regular communication and updates on their progress, as evidenced by their preference for receiving a call from a nurse to discuss any updates. Overall, this segment of the target audience is likely to be highly engaged and <br><br> proactive in managing their health. |
| List what is missing or should be known about this segment, in question form: <br><br> 1. How often does the doctor explain using simple and easy-to-understand language? <br> 2. Are there any limitations or conditions in which the doctor does not use visual aids or diagrams to explain the patient's condition? <br> 3. How frequently is the online progress survey sent via email for visit follow-up? <br> 4. Is the text message asking about changes or improvements sent after every visit follow-up or at specific intervals? <br> 5. Are there any requirements or instructions for using the mobile health tracking app to monitor progress? <br> 6. How often does the nurse call to discuss updates on the patient's progress? <br> 7. Are there any specific topics or updates the nurse discusses during the call? <br> 8. Is there an option for alternative methods of visit follow-up, such as in-person appointments or video calls? <br> 9. What is the overall satisfaction level of patients with the mentioned attributes? <br> 10. Are there any additional communication channels available for visit follow-up, apart from email, text messages, and phone calls? |
| 11. How long are the appointments typically and is there enough time during visits for comprehensive explanations and engagement with visual aids? <br> 12. Is there any validation or feedback mechanism to ensure that the explanations and visual aids effectively address the patients' understanding and needs? <br> 13. Are there any costs associated with using the mobile health tracking app or accessing any of the follow-up communication channels? <br> 14. Can patients request additional support or clarification if they do not understand the explanations or visual aids provided by the doctor? <br> 15. How soon after the appointment does the visit follow-up occur? |
| Which messages will interest this segment? <br><br> This segment will be interested in the following messages: <br><br> - Your doctor will explain your condition using simple and easy-to-understand language. <br> - Your doctor will use visual aids or diagrams to help explain your condition if applicable. <br> - You will receive an e-mail with a link to an online progress survey for visit follow-up. <br> - You will receive a text message asking about any changes or improvements for visit follow-up. <br> - You can use a mobile health tracking app to monitor your progress for visit follow-up. <br> - You will receive a call from a nurse to discuss any updates on your progress for visit follow-up. |
| Mindset 2 of 3 |
| Doctor is attentive to my needs and involves me |
| Create a label for this segment: Patient Satisfaction with Doctor Communication and Involvement in <br> Treatment Decision-making |
| Describe this segment: This segment consists of individuals who value receiving preventive care advice and recommendations during their visits. They also appreciate it when their doctor explains their condition using understandable medical terminology and uses visual aids or diagrams when applicable. These individuals prefer doctors who take the time to listen to their concerns, answer any questions they may have, and involve them in the decision-making process by explaining the pros and cons of different treatment options. They appreciate doctors who consider their preferences and values when developing a treatment plan and offer regular follow-up appointments to discuss progress and make necessary adjustments. Additionally, they value doctors who ask for feedback and satisfaction with the treatment plan. Overall, this segment prioritizes communication, patient involvement, and personalized care. |
| Describe the attractiveness of this segment as a target audience: <br><br> The attributes mentioned suggest that this segment of the target audience for the research study is likely to be highly interested in receiving comprehensive and personalized healthcare. They value receiving preventive care advice and recommendations, as well as having their doctor explain their condition using understandable medical terminology and visual aids. This indicates that they have a desire for clear communication and understanding of their health-related issues. <br><br> Furthermore, the fact that the segment desires their doctor to take the time to listen to their concerns and answer their questions shows that they value a strong patient-doctor relationship and want to be actively involved in their own healthcare decisions. They also appreciate the doctor's willingness to involve them in the decision-making process by explaining the pros and cons of different treatment options. <br><br> The preference for a doctor who considers their preferences, values, and feedback when developing a |
| treatment plan indicates that this segment values a personalized approach to their healthcare. They also appreciate regular follow-up appointments to discuss their progress and make necessary adjustments to the treatment plan. <br><br> Overall, this segment can be seen as highly attractive as a target audience because they prioritize clear communication, involvement in decision-making, personalized care, and regular follow-up. They are likely to be proactive in managing their health and seeking out a doctor who can meet their needs and preferences. |
| List what is missing or should be known about this segment, in question form: <br><br> 1. How frequently are preventive care advice and recommendations provided during "My Visit"? <br> 2. How often does "My Doctor" explain using understandable medical terminology when discussing the patient's condition? <br> 3. In what circumstances are visual aids or diagrams used by "My Doctor" to help explain the patient's condition? <br> 4. How often does "My Doctor" take the time to listen to the patient's concerns and answer their questions? |

5. How frequently does "My Doctor" explain the pros and cons of different treatment options and involve the patient in the decision-making process?

6. To what extent does "My Doctor" consider the patient's preferences and values when developing a treatment plan?

7. How often does "My Doctor" offer regular follow-up appointments to discuss the patient's progress and make necessary adjustments to their treatment plan?

8. How frequently does "My Doctor" ask the patient for their feedback and satisfaction with the treatment plan?

Which messages will interest this segment?

This segment is likely to be interested in messages that emphasize the following attributes:

1. Receive preventive care advice and recommendations during their visit.

2. Explanation of their condition using understandable medical terminology.

3. Use of visual aids or diagrams to aid in the understanding of their condition, if applicable.

4. Taking the time to listen to their concerns and answering any questions they may have.

5. Explanation of the pros and cons of different treatment options and involving them in the decision- making process.

6. Considering their preferences and values when developing a treatment plan.

7. Offering regular follow-up appointments to discuss progress and make necessary adjustments to the treatment plan.

8. Asking for feedback and ensuring satisfaction with the treatment plan.

Mindset 3 of 3

Visit ends with what the patient must do

Create a label for this segment: Engaged and Proactive Patients

Describe this segment:

This segment of the research study includes individuals who value receiving preventive care advice and recommendations during their visit. They also prioritize asking questions about any health-related topics or conditions they are curious about. These individuals are interested in seeking guidance on managing stress or improving their mental well-being. Additionally, they desire to develop a personalized health plan or set goals for the future during their visit. They highly appreciate doctors

Treatment plan indicates that this segment values a personalized approach to their healthcare. They also appreciate regular follow-up appointments to discuss their progress and make necessary adjustments to the treatment plan.

Overall, this segment can be seen as highly attractive as a target audience because they prioritize clear communication, involvement in decision-making, personalized care, and regular follow-up. They are likely to be proactive in managing their health and seeking out a doctor who can meet their needs and preferences.

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

9. How frequently are preventive care advice and recommendations provided during "My Visit"?

10. How often does "My Doctor" explain using understandable medical terminology when discussing the patient's condition?

11. In what circumstances are visual aids or diagrams used by "My Doctor" to help explain the patient's condition?

12. How often does "My Doctor" take the time to listen to the patient's concerns and answer their questions?

13. How frequently does "My Doctor" explain the pros and cons of different treatment options and involve the patient in the decision-making process?

14. To what extent does "My Doctor" consider the patient's preferences and values when developing a treatment plan?

15. How often does "My Doctor" offer regular follow-up appointments to discuss the patient's progress and make necessary adjustments to their treatment plan?

16. How frequently does "My Doctor" ask the patient for their feedback and satisfaction with the treatment plan?

Which messages will interest this segment?

This segment is likely to be interested in messages that emphasize the following attributes:

9. Receive preventive care advice and recommendations during their visit.

10. Explanation of their condition using understandable medical terminology.

11. Use of visual aids or diagrams to aid in the understanding of their condition, if applicable.

12. Taking the time to listen to their concerns and answering any questions they may have.

13. Explanation of the pros and cons of different treatment options and involving them in the decision- making process.

14. Considering their preferences and values when developing a treatment plan.

15. Offering regular follow-up appointments to discuss progress and make necessary adjustments to the treatment plan.

16. Asking for feedback and ensuring satisfaction with the treatment plan.

Mindset 3 of 3

Visit ends with what the patient must do

Create a label for this segment: Engaged and Proactive Patients

Describe this segment:

This segment of the research study includes individuals who value receiving preventive care advice and recommendations during their visit. They also prioritize asking questions about any health-related topics or conditions they are curious about. These individuals are interested in seeking guidance on managing stress or improving their mental well-being. Additionally, they desire to develop a personalized health plan or set goals for the future during their visit. They highly appreciate doctors

who take the time to actively listen to their concerns and answer any questions they may have. Furthermore, they appreciate receiving follow-up calls from nurses to discuss any updates on their progress.

Describe the attractiveness of this segment as a target audience:

This segment of individuals who are interested in receiving preventive care advice and recommendations, asking questions about health-related topics, seeking guidance on managing stress or improving mental well-being, developing personalized health plans or goals, and having doctors who actively listen and answer questions is highly attractive as a target audience.

These individuals demonstrate a proactive approach towards their health and well-being by actively seeking information and guidance. They prioritize their overall well-being, not just the treatment of specific ailments or conditions. The fact that they want to develop personalized health plans or goals indicates a desire to take control of their health and make informed decisions.

Moreover, the segment values the doctor-patient relationship, as they appreciate their doctor taking the time to listen to their concerns and answering any questions they may have. This attribute suggests that they value trust and open communication, which are crucial in delivering effective healthcare.

The fact that they receive a follow-up call from a nurse to discuss any updates on their progress indicates a level of care and support beyond initial visits. This aspect of ongoing monitoring and support is likely to enhance the attractiveness of this segment as a target audience.

Overall, this segment demonstrates a high level of engagement, motivation, and active involvement in their healthcare. They are likely to be receptive to health education and interventions, making them an attractive target audience for promoting preventive care, personalized health planning, and overall well-being.

| |
|---|
| List what is missing or should be known about this segment, in question form: |
| - How many participants were included in the total sample? |
| - Was this research study conducted in a specific geographical location or across multiple locations? |
| - What were the demographics (age, gender, ethnicity, etc.) of the participants? |
| - Did the participants have any specific health conditions or were they generally healthy individuals? |
| - How often did the participants visit their doctors or healthcare providers? |
| - Did the participants have health insurance coverage? |
| - Were the participants satisfied with the preventive care advice and recommendations they received during their visit? |
| - Did the participants find the guidance on managing stress or improving mental well-being helpful? |
| - What were the specific components of the personalized health plan or goals developed during the visit? |
| - How often did the participants receive follow-up calls from nurses, and what was the purpose of these calls? |

| |
|---|
| Which messages will interest this segment? |
| The messages that will interest this segment are: |
| 1.   Receive preventive care advice and recommendations during your visit. |
| 2.   Ask questions about any health-related topics or conditions you're curious about during your visit. |
| 3.   Seek guidance on managing stress or improving mental well-being during your visit. |
| 4.   Develop a personalized health plan or goals for the future during your visit. |
| 5.   Your doctor takes the time to listen to your concerns and answers any questions you may have. |
| 6.   Get a call from a nurse to discuss any updates on your progress as a follow-up to your visit. |

**Table 5:** AI driven suggestions for new or innovative products, services, experiences or policies, based upon the analysis of the strong performing elements in a Mind Genomics study.

| |
|---|
| List and briefly describe attractive new or innovative products, services, experiences, or policies |
| Mind-Set 1: Focus on connection with the doctor after the visit Interactive Health Education Platforms: These platforms provide interactive and user-friendly tools for doctors to explain medical conditions to patients using simple and easy-to-understand language. They may include visual aids, videos, and diagrams to enhance the patient's understanding. |
| 2. Mobile Health Tracking Apps: These apps allow patients to monitor their progress and track their health conditions using their smartphones. They can receive reminders for medication, record symptoms, and even share data with their doctors for better follow-up care. |
| 3.   Online Progress Surveys: Sending patients a link to an online progress survey post-visit allows for convenient and efficient follow-up on their condition. Patients can easily provide feedback on their progress, enabling doctors to make necessary adjustments to their treatment plans. |
| 4.   Text Message Follow-ups: Sending patients text messages to ask about any changes or improvements after their visit offers a quick and non-intrusive mode of communication. Patients can respond at their convenience, ensuring regular communication and updates. |
| 5.   Nurse Call Updates: Having a nurse call patient to discuss any updates on their progress offers a personalized touch to follow-up care. It allows for detailed discussions and reassurances, ensuring patients feel supported throughout their journey. |
| Overall, these attractive new products and services aim to enhance patient engagement, understanding, and convenience in ongoing healthcare experiences and follow-up care. |
| Mind Set 2            Doctor is attentive to my needs and involves me |
| One attractive new or innovative product for this segment could be a mobile application that allows patients to easily access personalized preventive care advice and recommendations. The app could provide users with information on recommended screenings, vaccinations, and lifestyle modifications tailored to their age, medical history, and specific health concerns. It could also send reminders for upcoming preventive care appointments and provide information on nearby healthcare providers for these services. |
| Another attractive innovation could be the use of augmented reality (AR) technology in medical consultations. Doctors could use AR visual aids and diagrams to help explain complex medical conditions to patients, making it easier for them to understand their condition and treatment options. This technology could enhance patient education and engagement, ultimately leading to better treatment outcomes. |
| Furthermore, a policy that encourages doctors to involve patients in the decision-making process and consider their preferences and values when developing a treatment plan could be highly attractive for this segment. This could involve implementing shared decision-making tools and training healthcare providers in effective communication skills to ensure patients feel heard and involved in their own healthcare decisions. |
| Overall, any product, service, experience, or policy that improves patient-physician communication, enhances patient education and engagement, and prioritizes patient preferences and values would be attractive to this segment. |
| Mind-Set 3:  Visit ends with what the patient must do Virtual preventive care consultations: This involves providing individuals with the opportunity to receive preventive care advice and recommendations through virtual consultations. With advancements in telehealth, individuals can connect with healthcare professionals remotely to discuss their health concerns and receive personalized advice and recommendations. |
| 1.   Online health forums and chatbots: To cater to individuals who are curious about health-related topics or conditions, online health forums and chatbots can be created. These platforms allow users to ask questions and get answers from healthcare professionals or other knowledgeable individuals. It provides a convenient and accessible way to seek health-related information. |
| 2.   Mental health and stress management apps: To address the need for guidance on managing stress and improving mental well-being, innovative mobile applications can be developed. These apps could provide tools for self-assessment, stress reduction techniques, meditation exercises, and personalized recommendations based on individual needs. |
| 3.   Personalized health planning platforms: A digital platform could be created to help individuals develop personalized health plans or goals for the future. This platform could integrate various health data, such as medical history, lifestyle habits, and individual preferences, to provide tailored recommendations and set achievable goals for overall well-being. |
| 4.   Virtual follow-up consultations: Instead of traditional phone calls, healthcare providers can implement virtual follow-up consultations with patients. This would allow for a more interactive and comprehensive discussion regarding the individual's progress. It also provides an opportunity for patients to ask any further questions they may have and ensures continuity of care. |
| These new products, services, experiences, or policies cater to the preferences and needs of the research study sample by offering convenient, personalized, and accessible healthcare solutions. They prioritize patient engagement, empowerment, and facilitate effective communication with healthcare providers. |

**Table 6:** The form used to create the PVI (personal viewpoint identifier). The format is a drag-and-drop powered by Microsoft Excel®.

| ID | Question Code | Question Text | Mind-set1 | Mind-set2 | Mind-set3 |
|---|---|---|---|---|---|
| 1 | xxx0 | SetPat1 | | | |
| | xxx1 | MindSet Name | Focus on connection with Dr. after visit | Dr. attentive to my needs & involves me | Visit ends with knowing specifically what to do |
| 3 | xxx2 | MindSet Feedback | | | |
| 4 | xxx3 | Mindset Video | Put Mindset Video 1 here Optional | Put Mindset Video 2 here Optional | Put Mindset Video 3 here Optional |
| 5 | xxx4 | Mindset Link | Put Mindset | Put Mindset | Put Mindset |
| | | | Link 1 here Optional | Link 2 here Optional | Link 3 here Optional |
| 6 | xxx5 | Additive Constant | 0 | 0 | 0 |
| 7 | xxx6 | In the PVI there are two Answers: Anchor for Answer on Left-Anchor for Answer on Right | ME | NOT ME | |

| | | SPECIALTY QUESTION TEMPLATE - Optional | | |
|---|---|---|---|---|

| ID | Question Text | Option A | Option B | Option C | Option D |
|---|---|---|---|---|---|
| 1 | | | | | |
| 2 | | | | | |
| 3 | | | | | |
| 4 | | | | | |

| | | QUESTION TEMPLATE | |
|---|---|---|---|

| ID | Question Code | Question Text | Mind-set1 | Mind-set2 | Mind-set3 |
|---|---|---|---|---|---|
| 1 | E01 | Visit Follow up: I get a call from nurse to discuss any updates on my progress. | 26 | 13 | 21 |
| 2 | E02 | My Doctor: Explains using understandable medical terminology when discussing my condition. | 20 | 23 | 14 |
| 3 | E03 | My Doctor: Considers my preferences and values when developing a treatment plan. | 7 | 34 | 8 |
| 4 | E04 | My Doctor: Explains the pros and cons of different treatment options and involve me in the decision-making process. | 9 | 29 | 8 |
| 5 | E05 | My Doctor: Explains using simple and easy-to-understand language. | 21 | 19 | 17 |
| 6 | E06 | My Doctor: Offers regular follow-up appointments to discuss my progress and make necessary adjustments to my treatment plan. | 3 | 31 | 9 |
| 7 | E07 | My Doctor: Takes the time to listen to my concerns ... answers any questions I may have. | 20 | 23 | 23 |
| 8 | E08 | My Doctor:: Asks me for feedback and satisfaction with treatment plan. | 9 | 28 | 11 |
| 9 | E09 | My Visit: Ask questions about any health- related topics or conditions I'm curious about. | 20 | 18 | 26 |
| 10 | E10 | My Visit: Develop a personalized health plan or goals for the future. | 13 | 18 | 27 |
| 11 | E11 | My Visit: Receive preventive care advice and recommendations. | 11 | 22 | 30 |
| 12 | E12 | My Visit: Seek guidance on managing stress or improving mental well-being. | 14 | 17 | 32 |
| 13 | E13 | Visit Follow up: I get a call from nurse to discuss any updates on my progress. | 26 | 13 | 21 |
| 14 | E14 | Visit Follow up: I get a text message asking about any changes or improvements. | 23 | 5 | 17 |
| 15 | E15 | Visit Follow up: I get an e-mail with a link to an online progress survey. | 25 | 7 | 14 |
| 16 | E16 | Visit Follow up: I use a mobile health tracking app to monitor my progress. | 26 | 10 | 13 |

## Please tell us how you feel about a visit to the local doctor's office or local medical clinical. 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 Purposes *Required**
○ Allow ○ Not Allow

**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

## PATIENT DESCRIBING DR. VISIT PVI 07.21.2023.1

**WHICH DESCRIBES YOU**
○ GO OFTEN TO SEE DR.
○ GO ONLY WHEN I'M SICK OR NOT WELL

**MY DOCTOR: OFFERS REGULAR FOLLOW-UP APPOINTMENTS TO DISCUSS MY PROGRESS AND MAKE NECESSARY ADJUSTMENTS TO MY TREATMENT PLAN.**
○ ME
○ NOT ME

**MY VISIT: RECEIVE PREVENTIVE CARE ADVICE AND RECOMMENDATIONS.**
○ ME
○ NOT ME

**MY DOCTOR:: ASKS ME FOR FEEDBACK AND SATISFACTION WITH TREATMENT PLAN.**
○ ME
○ NOT ME

**MY DOCTOR: CONSIDERS MY PREFERENCES AND VALUES WHEN DEVELOPING A TREATMENT PLAN.**
○ ME
○ NOT ME

**MY VISIT: SEEK GUIDANCE ON MANAGING STRESS OR IMPROVING MENTAL WELL-BEING.**
○ ME
○ NOT ME

**MY DOCTOR: EXPLAINS THE PROS AND CONS OF DIFFERENT TREATMENT OPTIONS AND INVOLVE ME IN THE DECISION-MAKING PROCESS.**
○ ME
○ NOT ME

**Figure 6:** The PVI (personal viewpoint identifier), as shown to the respondent who completed the questionnaire. The results are immediately databased, and returned to the clinician and, when desired, to the patient.

the BimiLeap platform works with those divisions of people but adds to those divisions the ability to identify new-to-the-world groups of individuals, not based on general behaviors, but rather base on their responses to granular level descriptions of the situation. It is the compilation of such data which promise the ability to know what to do, at least at the level of person-to-person interaction to create a better medical experience, here specifically a better visit to the doctor.

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