

Pregnant Persons Desired Needs for Patient-Centered-Care in Louisiana: A Mind Genomics Cognitive Science Analysis

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How to cite this paper: McKinley, E. M. (2024). Pregnant Persons Desired Needs for Patient-Centered-Care in Louisiana: A Mind Genomics Cognitive Science Analysis. *Psychology*, 15, 607-618.
<https://doi.org/10.4236/psych.2024.155037>

Received: April 13, 2024

Accepted: May 18, 2024

Published: May 21, 2024

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Abstract

The importance of utilizing prenatal care cannot be overstated when it comes to ensuring a healthy pregnancy and positive birth outcomes. Unfortunately, Louisiana has higher rates of infant and maternal mortality compared to other states in the United States. However, patient-centered care (PCC) has been proven to have a positive impact on prenatal outcomes. In a groundbreaking study, Mind Genomics™ cognitive science was used to examine and identify the maternal mindsets associated with prenatal PCC needs. In June 2023, a cross-sectional web-based survey was conducted, involving three hundred pregnant women from Louisiana. The majority of the participants (83.9%) were first-time mothers, and they were divided into two distinct mindsets: I) those who prioritize birth outcomes and trust their healthcare provider (n = 142), and II) those who prioritize interactive communication for a safe pregnancy (n = 158). It is evident that there are women in Louisiana who highly value prenatal PCC through effective communication with their healthcare provider, while others prioritize finding a trustworthy and reliable provider before becoming a patient. Healthcare providers who focus on their reputation, prioritize quality interactions, and instill confidence in the safety of pregnancy and birth throughout their practice will resonate with individuals in either mindset.

Keywords

Louisiana, Maternal Health, Mind Genomics, Patient-Centered Care, Pregnancy

1. Introduction

Early and comprehensive prenatal care is crucial in the United States to minim-

ize the likelihood of negative outcomes for both the mother and the baby (Morong, Martin, Ware, & Robichaux, 2017; Waits, Smith, & Hurst, 2020; Wallace, Dyer, Felker-Kantor, Benno, Vilda, Harville, & Theall (2021). Studies have shown a significant number of pregnancy complications in the country, with a majority of women experiencing at least one complication (Law, McCoy, Lynen, Curkendall, Gatwood, Juneau, & Landsman-Blumberg (2015). The financial impact of maternal mortality due to untreated or inadequately monitored risk factors during pregnancy is substantial. The expenses associated with childbirth in a hospital for women facing severe complications are considerably higher compared to those with no complications. It is evident from research that appropriate prenatal care can help mitigate risk factors, reduce complications, and lower additional costs (Moran, Wuytack, Turner, Normand, Brown, Begley, & Daly, 2020; Vesco, Ferrante, Chen, Rhodes, Black, & Allen-Ramey, 2020).

Proper prenatal care extends beyond ensuring regular visits to a healthcare provider throughout pregnancy. While the term “appropriate” is commonly used in recommendations, its implementation can vary among different providers. Several studies conducted in the past six years have identified key elements of high-quality prenatal care, including trust, communication, a safe environment, involvement in decision-making, meeting expectations, and minimizing complications (Leiferman, Sinatra, & Huberty, 2014; Maunder & Hunter, 2016; Vedam, Stoll, MacDorman, Declercq, Cramer, Cheyney, & Powell Kennedy, 2018) Incorporating these essential components into a patient-centered care approach could potentially enhance pregnancy outcomes, given the proven success of patient-centered care in improving clinical results (Edgman-Levitan & Schoenbaum, 2021). Understanding the specific needs and expectations of pregnant individuals in Louisiana regarding prenatal care can assist health educators in developing more effective training programs for providers in patient-centered care for prenatal services.

1.1. Mind Genomics™ Cognitive Science

Mind Genomics™ (MG) examines the psychological aspects of how individuals make decisions, aiming to uncover their preferences when it comes to purchasing, representing, or desiring a particular “product” (Moskowitz, Gofman, Beckley, & Ashman, 2006). In order to grasp the concept of MG, it is essential to comprehend conjoint measurement, a fundamental component in the framework of this psychological science. Conjoint measurement involves analyzing responses to various combinations of ideas, as opposed to presenting ideas in isolation, in order to gain insight into what truly resonates with an individual. Through the presentation of idea combinations, the experimental design replicates real-life scenarios, prompting participants to make trade-off decisions rather than simple binary choices (Theriot, Urrutia-Alvarez, & McKinley, 2021).

MG is built upon the principles of stimulus-response, Internet-based testing, and multiple regression tests to identify patterns of mindsets. A user-friendly survey platform called BimiLeap (Big Mind Learning App) was created to pro-

vide a tangible method for conducting MG studies (Moskowitz, Wren, & Papajorgji, 2020). BimiLeap utilizes ordinary least-squares regressions to automatically generate output, eliminating the need for users to perform statistical analysis themselves. The output document allows users to examine various variables, including predisposition to the topic of interest and open-ended question responses. Notably, the analysis uncovers distinct mindsets within the population through cluster analysis. This scientific approach can be applied to healthcare to understand people's preferences, values, and expectations regarding care experiences and payment for services rendered (Gabay, Garbi, Zemel, Gere, Starke, & Moskowitz, 2019).

1.2. Interaction Model of Client Health Behavior

Cox's Interaction Model of Client Health Behavior (IMCHB) (Cox, 1982) has proven to be beneficial in assessing patient-provider interactions effectively (Dahlem, Villarruel, & Ronis, 2015). By making modifications to IMCHB, it will facilitate the creation of the four main quadrants of the survey. The three components of IMCHB consist of "Client Singularity", which involves understanding a person's unique perspective based on their background, motivations, understanding, and emotional responses. "Client-professional Interaction" encompasses the provider's skills, adherence to guidance, and the usefulness of shared guidance. Lastly, "Health Outcomes" is determined by the specific health topic or issue. These elements will form the four quadrants: "Patient Motives", "Patient-Provider Interaction", "Pregnancy Outcomes" and "Birth Outcomes" (Kim, Lee, & Ryu, 2020). By combining the modified version of IMCHB with the innovative utilization of conjoint measurement and analysis, distinct segments of pregnant women can be identified, allowing for tailored care that aligns with their specific needs for a successful pregnancy and birth (Martin, Hamilton, Osterman, & Driscoll, 2019). Education and training can be developed to enhance prenatal care in a state that requires enhancements in order to decrease maternal mortality, low birth weight deliveries, and preterm births. This study is the inaugural of its kind utilizing MG among expectant individuals to examine prenatal PCC, and it is a data-oriented initiative aimed at optimizing strategies for enhancing pregnancy and birth outcomes in Louisiana.

2. Materials and Methods

2.1. Study Design and Participants

Mind Genomics™ studies are structured as cross-sectional investigations, aiming to gauge an individual's sentiments towards the survey content in real-time. The utilization of an online survey platform streamlines the data collection process, ensuring efficiency and organization for the researcher. Eligible participants must be at least 18 years old and pregnant during the survey period. Access to the survey was limited to English speakers, requiring participants to have a reliable internet connection through a smartphone, tablet, or computer to participate in the study.

2.2. Survey Development

All MG studies are carried out using the BimiLeap platform. To gather additional information, a Qualtrics survey was utilized to inquire about demographic details that BimiLeap was unable to cover. The survey included 11 questions regarding pregnancy status, first pregnancy or subsequent pregnancies, marital status, Louisiana parish of residence, race and ethnicity, education level, current work status and income range, type of health insurance, and the duration between pregnancy discovery and the first prenatal visit. Following these questions, a link to the BimiLeap section of the study was provided. Within BimiLeap, participants were required to respond to three fixed questions (which cannot be altered by the researcher) concerning sex, age range, and date of birth. Additionally, the researcher had the option to create a single “classification” question with a 4-point scale and one open-ended question. The classification question asked participants if they agreed with the statement: “*My prenatal care doctor is respectful and responsive to my individual needs and values during this current pregnancy?*” The scale included the choices: “*Definitely no*”, “*Somewhat no*”, “*Somewhat yes*”, and “*Definitely yes*”. The study concluded with an open-ended question prompting participants to share *at least one aspect they were dissatisfied with regarding their current prenatal care provider*. Participants were given the opportunity to provide as much or as little detail as they wished. The remaining 24 questions consisted of vignettes that combined three to four of the 16 elements related to patient-centered prenatal care during pregnancy, as outlined by the author based on PCC research and Cox’s IMCHB. **Table 1** displays

Table 1. The quadrants inspired by the Interaction Model of Client Health Behavior and the sixteen elements examined to evaluate patient-centered care during pregnancy. (a) Patient Motives; (b) Patient-Provider Interaction; (c) Expected Pregnancy Outcomes; (d) Expected Birth Outcomes.

(a)	(b)
<ul style="list-style-type: none"> ▪ Provider has a good reputation in the community ▪ Provider has provided quality care to people I know ▪ Provider is an influential member of the community ▪ Provider is not the only provider option I have 	<ul style="list-style-type: none"> ▪ Provider makes sure I understand what they are saying before moving on ▪ Provider makes sure I understand what they are going to do before they do it ▪ Provider is open to my ideas and suggestions for care ▪ Provider listens carefully to me and my concerns
(c)	(d)
<ul style="list-style-type: none"> ▪ Provider will work with me through a safe and healthy pregnancy ▪ Provider will be my first choice for care for my next pregnancy ▪ Provider provides care to lead to a satisfying pregnancy experience ▪ Provider works with me to have a full-term pregnancy (38 - 42 weeks) 	<ul style="list-style-type: none"> ▪ Provider will work with me through a safe and successful birth ▪ Provider will respect and adhere to my birth plans ▪ Provider will include me in making decisions about unexpected changes during labor and delivery ▪ Provider will ensure I am as healthy after birth as my new baby

the four quadrants, each containing four elements, based on patient-centered care and prenatal care that could be significant to a pregnant individual. Since both pregnancy and childbirth can have varying outcomes, the IMCHB element of “Health Outcomes” was divided into two separate categories.

The participant was given instructions to evaluate each set of elements presented on each screen as a whole and rate the value they assign to the ideas related to their own prenatal care experience with their current provider. This requires considering all elements simultaneously and assigning a general score of perceived value ranging from 1 to 5, with 1 indicating “*Not valuable at all*” and 5 indicating “*Extremely valuable*”. As the participant progresses through the vignettes, the combination of elements changes based on their previous responses. This unique feature of the BimiLeap system cannot be replicated in survey systems like Qualtrics. The customization of vignette combinations aims to dive deeper into the participant’s mindset regarding the topic, which the creators of MG refer to as “resonance” (Moskowitz, 2019). Each participant receives a distinct combination of 24 vignettes containing the elements.

2.3. Data Collection

Facebook advertisements were utilized to promote the survey, targeting females in Louisiana interested in pregnancy, parenting, and babies. The ads featured a study flyer outlining the inclusion criteria and a link to the survey for participants to provide informed consent and begin the study. The survey remained open for a period of 3 days in June of 2023 until reaching the maximum sample size of 300 participants. This sample size was chosen to ensure a strong and reliable data set, while also making the most of the available funding, as BimiLeap studies require a payment per participant for data collection. Researchers paid \$2.00 per completed survey, in addition to a \$600 set-up fee. Participants who completed the survey had the option to enter a draw for a \$50 Amazon gift card. The study was supported by grant funds from the Academy of Nutrition and Dietetics, Research Dietetics Practice Group Faculty Pilot Grant Program. All survey items and study methods were approved by the LSU AgCenter Institutional Review Board (IRBAG-21-0163).

2.4. Statistical Methods

Traditionally, MG datasets undergo cluster analysis for case segmentation and ordinary least squares regressions. BimiLeap charges a fee for conducting these statistical analyses, which is then shared with the researcher post data collection. Researchers can download an Excel file from the BimiLeap website and import it into SPSS for result verification. The output from BimiLeap is structured to aid researchers in evaluating results and swiftly identifying sample mindsets. BimiLeap converts rating responses from vignettes into a binary scale (0 or 100) following the standard method in consumer research. Respondents who rated a vignette as valuable (4 or 5 = 100) are considered part of a specific “group”,

while those who rejected the vignette (1, 2, or 3 = 0) are not part of that “group”. The cutoff for the rating scale is subjective but widely used in MG studies due to its accuracy in prior research (Moskowitz, 2012). After statistical analysis, each of the 16 elements is assigned a utility value (average coefficient) based on a Moskowitz & Martin (2008) Algorithm. Elements with a value of 8 or higher are highlighted in green by BimiLeap, indicating resonance with a subset of the sample. Ordinary least squares regressions generate element clusters that form a “mindset”. Researchers are presented with two mindsets along with corresponding data and subsample size. Demographic questions from the Qualtrics survey section were analyzed in SPSS to provide an overview of the study sample.

3. Results

3.1. Sample Demographics

A grand total of 319 female participants initiated the survey, with 300 successfully finishing the BimiLeap section and 286 completing the Qualtrics demographic survey in its entirety. **Table 2** provides an overview of the frequency and proportion of important demographic factors within the female sample. It is important to note that all respondents identified themselves as women, rather than non-binary or any other gender category. The sample was drawn from 54 out of the 64 parishes in the state, with an average age of 28.7 years and an age range spanning from 23 to 45 years.

3.2. Key BimiLeap Results

The BimiLeap analysis and cluster analysis segmentation encompass the information gathered from the entire pool of 300 women who participated in the survey. Within this group of pregnant women in Louisiana, two unique perspectives on prenatal patient-centered care emerged. The findings of the cluster analysis are presented in **Table 3**, highlighting the key factors that influenced the formation of each mindset.

Mindset I: Emphasis on Birth Results with a Provider They Have Confidence in.

In this scenario where two mindsets are compared, the initial mindset is represented by the opinions of 142 individuals among the total of 300 participants. The aspects that resonated the most were primarily found in quadrant A (Patient Motives, such as the provider’s positive reputation in the community, track record of delivering quality care to acquaintances, influential role in the community, and availability of alternative provider options) and D (Expected Birth Outcomes, including expectations of a safe and successful birth, commitment to respecting and following birth plans, and ensuring postpartum health for both mother and baby).

Mindset II: 1. Emphasis on Interactive Communication to Ensure a Healthy Pregnancy.

Table 2. Demographic snapshot of pregnant study sample in Louisiana (n = 286).

Demographic Item	Frequency (n)	Percentage (%)
First Pregnancy		
Yes	240	83.9
No	46	16.1
Marital Status		
Married	254	88.8
Single	11	3.8
Widowed/Divorced	3	1.2
Living with Partner, Not Married	18	6.2
Race		
Asian	4	1.4
Black	29	10.1
White	232	81.1
Alaska Native/American Indian	16	5.5
Native Hawaiian/Pacific Islander	5	1.9
Ethnicity		
Hispanic	85	29.8
Non-Hispanic	201	70.2
Education Level Completed		
High School or Less	15	6.5
Some College	130	45.4
Bachelor's Degree	87	29.3
Graduate Degree or Higher	54	18.8
Work Status		
Not Employed	26	9.0
Full Time Student	4	1.6
Employed Full Time	130	45.4
Employed Part Time	126	44.0
Income Range Per Year		
Less than \$20,000	9	3.5
\$20,000 - \$34,999	31	10.8
\$35,000 - \$49,999	88	30.7
\$50,000 - \$74,999	104	36.3
\$75,000 - \$99,999	42	14.6
Over \$100,0000	12	4.1

Continued

Health Insurance Type		
None	3	1.2
Private Insurance	143	50.0
Medicare	74	25.8
Medicaid	66	23.0

Table 3. BimiLeap output with cluster analysis segmentation and mindset elements.

	Mindset I	Mindset II
Base Size (n)	142	158
Coefficient		
Quadrant A: Patient Motives		
A1: Provider has a good reputation in the community	14*	3
A2: Provider has provided quality care to people I know	14*	4
A3: Provider is an influential member of the community	13*	3
A4: Provider is not the only provider option I have	15*	3
Quadrant B: Patient-Provider Interaction		
B1: Provider makes sure I understand what they are saying before moving on	6	16*
B2: Provider makes sure I understand what they are going to doing before they do it	5	13*
B3: Provider is open to my ideas and suggestions for care	5	15*
B4: Provider listens carefully to me and my concerns	4	15*
Quadrant C: Expected Pregnancy Outcomes		
C1: Provider will work with me through a safe and healthy pregnancy	7	12*
C2: Provider will be my first choice for care for my next pregnancy	5	10*
C3: Provider provides care to lead to a satisfying pregnancy experience	5	4
C4: Provider works with me to have a full-term pregnancy (38 - 42 weeks)	4	10*
Quadrant D: Expected Birth Outcomes		
D1: Provider will work with me through a safe and successful birth	12*	6
D2: Provider will respect and adhere to my birth plans	10*	5
D3: Provider will include me in making decisions about unexpected changes during labor and delivery	5	10*
D4: Provider will ensure I am as healthy after birth as my new baby	11*	5

Note. *Coefficients of ≥ 8 indicate resonance to that mindset.

The remaining 158 participants' thoughts make up the second mindset. Unlike mindset I, the elements that resonated the most were found in quadrant B (Patient-Provider Interaction, provider ensures I understand their communication, involves me in decision-making, is receptive to my suggestions, and listens attentively to my concerns) and C (Expected Pregnancy Outcomes, provider supports a safe and healthy pregnancy, is the preferred choice for future pregnancies, and collaborates with me for a full-term pregnancy). One aspect in quadrant D (provider involves me in decision-making for unexpected changes during labor and delivery) regarding labor and delivery decisions also struck a chord with mindset II.

3.3. Limitations

The participant sample in this study does not represent all pregnant individuals in Louisiana. The study specifically focused on pregnant women during data collection, excluding those who had recently given birth and may have had different perspectives on PCC. While the Qualtrics survey provided valuable insights into the sample, limitations in connecting datasets between Qualtrics and BimiLeap prevented a thorough case-by-case analysis. No correlations or comparisons were drawn based on mindset or demographics. MG was developed for product/service creators to enhance product design and marketing, and its application in health-related topics and behavioral theory is still in its early stages.

4. Conclusion and Discussion

Two different patterns of thinking regarding the value of elements of prenatal patient-centered care during pregnancy were discovered. Through the use of case segmentation, cluster analyses, and ordinary least squares statistical tests, the primary modes of thinking were identified, along with the key elements associated with one's prenatal care provider. One mindset placed importance on a provider who is recognized in the community for delivering high-quality care, while also prioritizing a safe birthing experience for both the mother and baby. This mindset aligns with the "Patient Singularity" element and the "Health Outcomes" related to birth, as outlined in Cox's Interaction Model of Client Health Behavior (Cox, 1982). The second mindset focused on the actual interactions with the provider and emphasized a safe, full-term pregnancy without any labor complications. In the context of the Interaction Model of Client Health Behavior, this mindset seems to correspond to the elements of "Client-professional Interaction" and the "Health Outcomes" associated with pregnancy (Cox, 1982). It is noteworthy that the statistical analysis produced two distinct mindsets, with separate emphasis on pregnancy and birth outcomes. Additionally, some women prefer patient-centered care through communicative interactions, while others prioritize a trustworthy and reliable provider. It is possible that women who had previous childbirth experiences projected their past encounters onto their responses, placing greater emphasis on the birthing process. Conversely, first-time mothers may have primarily considered the pregnancy itself, as they lack prior

birth experiences. Unfortunately, the researchers were unable to explore any further connections between the sample and these mindsets. One element out of the 16 did not align with the mindsets. Specifically, Quadrant C, element three, which focuses on providing care to ensure a positive pregnancy experience, did not appear to connect with the pregnant women's interactions with their prenatal care providers. It is possible that this discrepancy arises from the fact that these women may attribute the satisfaction of their experience to factors beyond the control of healthcare providers.

This preliminary Mind Genomics™ investigation examining the perspectives of pregnant women in Louisiana on their preferences for prenatal care through the framework of Cox's Interaction Model of Client Health Behavior revealed two distinct mindsets within the sample. Subsequent research endeavors could combine MG and BimiLeap methodologies or attempt to replicate similar approaches using fixed scenarios, followed by cluster analysis incorporating case segmentation and ordinary least squares regressions in an alternative statistical software. This approach would enable the incorporation of additional demographic inquiries or relevant variables into a single survey, resulting in a unified dataset for more sophisticated analysis. The developers of BimiLeap are striving to enhance the platform to allow researchers more flexibility in adding supplementary questions, albeit at an increased study cost. According to the findings of this study, pregnant women in Louisiana may prioritize a quality healthcare provider who is dedicated to ensuring a healthy delivery, or they may emphasize strong patient-provider interactions during appointments to promote a safe pregnancy. Prenatal healthcare professionals must prioritize establishing meaningful connections with every patient during appointments to promote healthy pregnancies and successful deliveries. Adequate prenatal care plays a crucial role in enhancing the likelihood of a safe pregnancy, childbirth, and postpartum care. Healthcare providers who prioritize their reputation, emphasize quality interactions during each visit, and instill confidence in expectant mothers regarding the safety of their pregnancy and delivery will appeal to individuals with varying perspectives. Sustained efforts to promote health and encourage pregnant women to begin prenatal care promptly upon confirming their pregnancy can also contribute to reducing high rates of pregnancy and childbirth complications.

Acknowledgements

The author would like to thank Melanie Caillouet, the research assistant on this project, for their help with recruitment.

Conflicts of Interest

The author declares there is no conflict of interest.

Funding Information

Provided by the Academy of Nutrition and Dietetics, Research Dietetic Practice

group through the Faculty Pilot Grant Award program.

References

- Cox, C. L. (1982). An Interaction Model of Client Health Behavior: Theoretical Prescription for Nursing. *Advances in Nursing Science*, 5, 41-56.
<https://doi.org/10.1097/00012272-198210000-00007>
- Dahlem, C. H. Y., Villarruel, A. M., & Ronis, D. L. (2015). African American Women and Prenatal Care: Perceptions of Patient-Provider Interaction. *Western Journal of Nursing Research*, 37, 217-235. <https://doi.org/10.1177/0193945914533747>
- Edgman-Levitan, S., & Schoenbaum, S. C. (2021). Patient-Centered Care: Achieving Higher Quality by Designing Care through the Patient's Eyes. *Israel Journal of Health Policy Research*, 10, Article No. 21. <https://doi.org/10.1186/s13584-021-00459-9>
- Gabay, G., Garbi, I., Glenn Zemel, G. Z., Ger, A., Starke, S., & Moskowitz, H. (2019). Cartography of Doctor-Patient Relationship: A Mind-Genomics Exploratory Study about the Public's Response to Patient-Centered-Care. *Research Open. Journal of Clinical Research and Medicine*, 2, 1-10. <https://doi.org/10.31038/JCRM.2019251>
- Kim, Y., Lee, H., & Ryu, G. W. (2020). Theoretical Evaluation of Cox's Interaction Model of Client Health Behavior for Health Promotion in Adult Women. *Korean Journal of Women Health Nursing*, 26, 120-130. <https://doi.org/10.4069/kjwhn.2020.06.13>
- Law, A., McCoy, M., Lynen, R., Curkendall, S. M., Gatwood, J., Juneau, P. L., & Landsman-Blumberg, P. (2015). The Prevalence of Complications and Healthcare Costs during Pregnancy. *Journal of Medical Economics*, 18, 533-541.
<https://doi.org/10.3111/13696998.2015.1016229>
- Leiferman, J., Sinatra, E., & Huberty, J. (2014). Pregnant Women's Perceptions of Patient-Provider Communication for Health Behavior Change during Pregnancy. *Open Journal of Obstetrics and Gynecology*, 4, 672-684.
<https://doi.org/10.4236/ojog.2014.411094>
- Martin, J. A., Hamilton, B. E., Osterman, M. J. K., & Driscoll, A. K. (2019). Births: Final Data for 2018. *National Vital Statistics Report*, 68, 1-47.
- Maunder, R. G., & Hunter, J. J. (2016). Can Patients Be 'Attached' to Healthcare Providers? An Observational Study to Measure Attachment Phenomena in Patient-Provider Relationships. *BMJ Open*, 6, e011068. <https://doi.org/10.1136/bmjopen-2016-011068>
- Moran, P. S., Wuytack, F., Turner, M., Normand, C., Brown, S., Begley, C., & Daly, D. (2020). Economic Burden of Maternal Morbidity—A Systematic Review of Cost-of-Illness Studies. *PLOS ONE*, 15, e0227377.
<https://doi.org/10.1371/journal.pone.0227377>
- Morong, J. J., Martin, J. K., Ware, R. S., & Robichaux III, A. G. (2017). A Review of the Preventability of Maternal Mortality in One Hospital System in Louisiana, USA. *International Journal of Gynecology & Obstetrics*, 136, 344-349.
<https://doi.org/10.1002/ijgo.12074>
- Moskowitz, H. R., Wren, J., & Papajorgji, P. (2020). *Mind Genomics and the Law*. LAP Lambert Academic Publishing.
- Moskowitz, H. R. (2019). Mind Cart AI. Bimi Leap. <https://www.bimileap.com/>
- Moskowitz, H. R. (2012). 'Mind Genomics': The Experimental, Inductive Science of the Ordinary, and Its Application to Aspects of Food and Feeding. *Physiology & Behavior*, 107, 606-613. <https://doi.org/10.1016/j.physbeh.2012.04.009>
- Moskowitz, H. R., & Martin, B. (2008). Optimising the Language of Email Survey Invitations. *International Journal of Market Research*, 50, 491-510.
<https://doi.org/10.1177/147078530805000407>

- Moskowitz, H. R., Gofman, A., Beckley, J., & Ashman, H. (2006). Founding a New Science: Mind Genomics. *Journal of Sensory Studies, 21*, 266-307. <https://doi.org/10.1111/j.1745-459X.2004.00066.x>
- Theriot, A., Urrutia-Alvarez, N., & McKinley, E. M. (2021). An Analysis of Pandemic Panic Buying Motivators among Undergraduate College Students Using Mind Genomics Cognitive Science. *Psychology, 12*, 1457-1471. <https://doi.org/10.4236/psych.2021.129092>
- Vedam, S., Stoll, K., MacDorman, M., Declercq, E., Cramer, R., Cheyney, M., Powell Kennedy, H. et al. (2018). Mapping Integration of Midwives across the United States: Impact on Access, Equity, and Outcomes. *PLOS ONE, 13*, e0192523. <https://doi.org/10.1371/journal.pone.0192523>
- Vesco, K. K., Ferrante, S., Chen, Y., Rhodes, T., Black, C. M., & Allen-Ramey, F. (2020). Costs of Severe Maternal Morbidity during Pregnancy in US Commercially Insured and Medicaid Populations: An Observational Study. *Maternal and Child Health Journal, 24*, 30-38. <https://doi.org/10.1007/s10995-019-02819-z>
- Waits, J. B., Smith, L., & Hurst, D. (2020). Effect of Access to Obstetrical Care in Rural Alabama on Perinatal, Neonatal, and Infant Outcomes: 2003-2017. *The Annals of Family Medicine, 18*, 446-451. <https://doi.org/10.1370/afm.2580>
- Wallace, M., Dyer, L., Felker-Kantor, E., Benno, J., Vilda, D., Harville, E., & Theall, K. (2021). Maternity Care Deserts and Pregnancy-Associated Mortality in Louisiana. *Women's Health Issues, 31*, 122-129. <https://doi.org/10.1016/j.whi.2020.09.004>