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Behavioral Science Insights for a Hungry Healthcare Market

How unconscious biases impact treatment decision-making

By Amy Marta, Hensley Evans and Fiona Taylor

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Mary, a 57-year-old woman with Type 2 diabetes, has been struggling to manage her disease for the last 20 years. She tried every possible treatment before switching to an injection, while her disease got worse and worse. Last year, at her doctor's insistence, she gave in and started on a non-insulin injection (NII) treatment. Because of her disease advancement, she takes six other medications to help manage her symptoms and co-morbidities.

When we asked Mary why she didn't want to switch to NIIs, she gave us several rational reasons. She told us she was afraid of needles and concerned about the cost. In addition, she was adamant she could do better managing her diabetes with diet and exercise if she just tried harder. However, decades of behavioral science research show that decision-making is heavily influenced by factors that fall outside of conscious awareness. Such work has garnered two Nobel prizes, including the 2017 prize for behavioral economist Richard Thaler.

With [behavioral science] in mind, we set out to see if there were any unconscious biases in Mary's decision to postpone switching to an NII: Was there a hidden "sandwich" impacting Mary's actions?

Behavioral science—the study of the mind and its processes—shines a new light on the way that everyone makes decisions. Even the most impartial among us can be affected, as demonstrated in a study on judges' sentencing decisions conducted by **Columbia Business School.** This research found that judges typically deny parole and hand down harsher sentences when they're tired and hungry. A prisoner's chance of parole depends on when a judge has taken his last break. Judges in the study often provided rational reasons for their decisions, such as the severity or type of crime. Yet when a judge was provided a break for a light meal, such as a sandwich, and then asked to make a sentencing decision, the judge often handed down shorter, more lenient terms. Mental fatigue, it turns out, often affects important decisions even among professionals who are trained and practiced in impartiality.

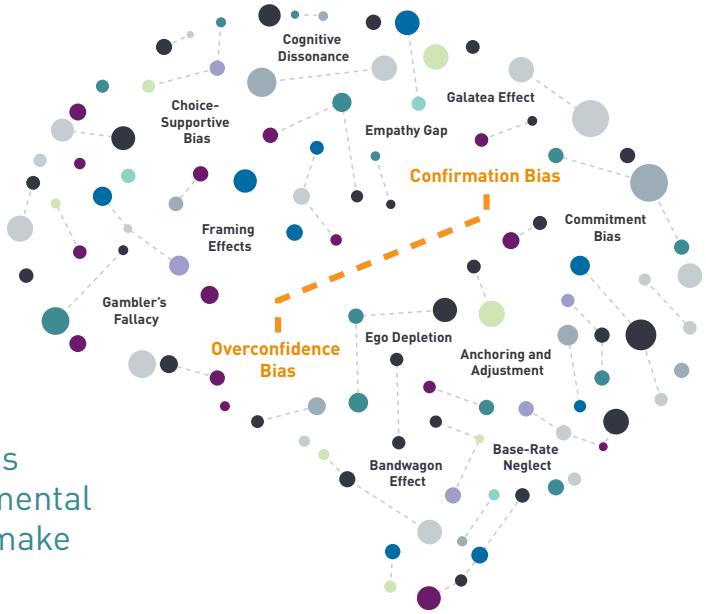
Understanding Patient Biases

Much of pharmaceutical marketing strategy is based on interrogatory research, where marketers ask patients to directly explain their own decision-making and behavior. While patients give honest accounts of how they think they behave, often their decisions are influenced by biases that are impossible to explain directly, forcing us to dig beneath the surface.

Using a combination of qualitative and quantitative research, we recently explored the role of behavioral science in decision-making for Type 2 diabetes patients and doctors. We started by interviewing eight patients and eight doctors to look for potential biases that affect treatment choice. Using a structured approach, we gathered clues hinting at the presence of cognitive biases. As we uncovered these clues, we probed further to explore and evaluate whether a particular bias was present or absent.

We then surveyed 500 patients to seek out empirical evidence of the biases that we had identified. Once we had investigated the biases, we engaged nine patients and nine doctors to co-create and evaluate potential solutions with us live in our ZS Experience Room™. The Experience Room simulates a physician's office, including the waiting room and exam rooms, with one-way mirrors and live video feeds, so that observers can watch in real time.

We conducted this study to provide marketers evidence that demonstrates the power of applying behavioral science to healthcare decision-making. In particular, we focused on identifying improved methods of maximizing NII adoption among Type 2 diabetes patients like Mary. We identified dozens of biases in our study. Two key examples, confirmation bias and overconfidence bias, illustrate the power of behavioral science research in patient decision-making.



Our brain uses hundreds of mental shortcuts to make decisions

Our results on the confirmation bias showed us that convincing patients to use NIIs who already hold negative perceptions about them can be very challenging. This makes it important for doctors to understand patients' preconceived notions about NIIs so that they can tailor their recommendations accordingly.

Example One: Confirmation Bias

Confirmation bias is a tendency to search for and interpret information in a manner that confirms established beliefs. In 2001, the University of Bordeaux conducted an experiment on confirmation bias in a class of future wine-makers. The students were asked to rate two different bottles of red wine, one labeled as cheap and the other as expensive. Though cheap wine actually was placed in both bottles, the average student described the cheap wine in the expensive bottle as "complex and rounded" while describing the same wine in the cheap bottle as "weak and flat."

We found that confirmation bias similarly affects diabetes patients' decision-making. For our study, we asked how patients came to learn about NIIs and the information that they typically encountered about the treatment. We found that patients who previously held a positive attitude toward NIIs were more receptive to the information provided by their doctors than patients who previously held negative attitudes toward NIIs.

Our quantitative survey provided further evidence of confirmation bias. We tested patients' perceptions of injectable medication for treating diabetes, and then explored how strongly they agreed with specific benefits of NIIs. Overall, we found that patients who previously indicated positive perceptions of injectable medication found the new information on NIIs more compelling than patients who previously indicated negative perceptions.

Our results on the confirmation bias showed us that convincing patients to use NIIs who already hold negative perceptions about them can be very challenging. This makes it important for doctors to understand patients' preconceived notions about NIIs so that they can tailor their recommendations accordingly. Pharmaceutical marketers also need to be aware that confirmation biases may be causing patients to be less receptive to a new treatment.

Example Two: Overconfidence Bias

Another powerful bias that affects Type 2 diabetes patients' decision-making is the overconfidence bias. Both the patients and physicians we spoke to shared evidence with us of patients erroneously believing that they could turn things around. Patients like Mary would not let go of the idea that they could successfully control their disease through the continued use of pills, diet and exercise.

In our quantitative research, we wanted to see how pervasive this bias was. We asked patients to rate their perceived levels of success at managing their Type 2 diabetes versus others with the disease. We found that, on average, patients

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believe that they are better at managing their Type 2 diabetes than others with the disease. This results in patients continuing with their current treatments longer than they should, and patients being dissuaded from seeking the help that they need.

From Simulations to Solutions

Understanding the biases at play is a critical first step, but the journey to applying behavioral science doesn't end there. We asked ourselves, Now that we have these insights, what can we do about it? To explore potential solutions, we held a series of co-creation "design thinking" exercises. We engaged three groups of patients and doctors in ZS's Experience Room™. The first group of participants, our control group, witnessed a conversation between a pair of actors portraying a doctor and a patient in which the patient didn't accept the doctor's recommendation for NII treatment. The second group witnessed the same conversation and was given an additional briefing of our behavioral science research findings. Our final group helped us refine and assess the solutions developed by the prior two.

The solutions proposed by the control group, who had not been briefed on behavioral science, were more traditional and focused on providing informational materials and contacts for support groups. In comparison, the suggestions that came from the group briefed on behavioral science focused on creating empathy and building motivation for the patient to accept the doctor's recommendations. For example, the group recommended a motivational conversation guide, and suggested that instead of talking theoretically about "scary needles," the doctor should give the injection pen to the patient to touch and feel.

We had our hypothesis on which solutions would be more impactful, but we wanted patients and doctors to evaluate them for us. We built prototypes to help bring each proposed solution to life. A fresh group of participants, who did not previously engage in the co-creation exercises, was asked to assess the likely success of each solution on a patient's treatment decision.

The solutions founded on behavioral science principles were overwhelmingly evaluated as more impactful by this independent group of doctors and patients.

Understanding which biases are present and what impact they are having unlocks the opportunity to bring new solutions to make patients more likely to accept treatment changes, comply with their care plan, get screened or use more support services.

Turning Biases Into Better Marketing and Better Patient Outcomes

Through understanding the unconscious biases that influence patients and physicians, we can come up with higher-impact strategies and tactics to overcome some of the most challenging behavioral objectives that marketers face. Instead of trying to fix "needle phobia," for example, we realize the need to address the product's short-term value proposition. We learned that our patient, Mary, was falling prey to the "better than average effect," a variant of overconfidence bias. This inflated her perceived ability to manage her diabetes with diet and exercise in the short term, despite years of failing to make lasting changes as her disease worsened. Like many others, Mary was paralyzed by the present bias: She could only see the short-term benefit of not switching (to continue to avoid injections), giving it irrational weight compared to the long-term benefit that an NII offered in terms of better disease control and health outcomes.

Mary is not alone in having powerful biases that affect her healthcare decisions. Understanding which biases are present and what impact they are having unlocks the opportunity to bring new solutions to make patients more likely to accept treatment changes, comply with their care plan, get screened or use more support services. For healthcare providers, understanding biases in their decision-making can help increase new treatment adoption, compliance with guidelines or willingness to switch products. For marketers, understanding unconscious biases helps with message optimization, patient support program design and implementation, and direct-to-consumer promotional materials.

By identifying biases and finding opportunities to overcome them—finding the hidden "sandwich"—pharmaceutical marketers can improve both patient and healthcare provider decision-making, resulting in better health outcomes for patients.

Recruitment efforts for this study were conducted by M3 Global Research.

About the Authors

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