Preferred Cognitive Styles and Decision Making in Vaccination Decisions

Caroline Poland, MA, LCAC, NCC
Taylor University Counseling Center
Upland, IN
Objectives

At the end of the session participants should be able to:

- Describe the Preferred Cognitive Styles and Decision Making Model (PCSDM)
- Discuss how patient’s cognitive style influences vaccine acceptance
- Apply the PCSDM model to typical patient case scenarios
There is a complex, and oft ignored, interplay between vaccine use, cognitive linguistics and framing, human behavior and perceptions, and decision-making.

The connection between human behavior and frames (beliefs, perceptions) in regards to risk profoundly influences thinking and vaccine use among both patients and providers.
People make decisions in a variety of ways
- Cognitive styles
- Heuristics
- Emotion
- Data
- Other

How you and your patients make decisions (esp. policy and health decisions) have major ramifications for outcomes
Editorial

Vaccine education spectrum disorder: the importance of incorporating psychological and cognitive models into vaccine education

Caroline M. Poland (M.A., NCC)
Mental Health Counseling Center,
Taylor University, Upland, IN, USA

Editor-in-Chief, VACCINE

Gregory A. Poland (MD, MACP)
Mary Lowell Leary Professor of Medicine,
Mayo Clinic, Rochester, Minnesota, USA

E-mail addresses: poland.caroline@gmail.com
(C.M. Poland), poland.gregory@mayo.edu
(G.A. Poland)
Foundational Concepts

- All individuals do not make decisions about their health and vaccines in the same way.

- Individuals each have preferred cognitive styles that they employ while making decisions. How they take in and process information will inform their decisions.

- The health field tends to present information in one specific style- analytical. HCWs present data and facts. This is evident in the Vaccine Safety Sheets mandated by the federal government.
In addressing those patients with vaccine hesitancy, it is critical to remember that there isn’t a magic statement to get them to move to vaccine acceptance.

Think of it in long-range terms. It might take several meetings and a few years of these sorts of discussions to move them from rejection or hesitancy to acceptance.

Be patient and LISTEN to the patient so you can respond empathetically.
CBT

- A type of therapy used in psychology to address the thought patterns of individuals.

- Builds on the connection between an individual’s thoughts, feelings, and behaviors.

- Using this idea, if HCWs want to change the behaviors of the patient, we must go back and address the thought patterns that influence how they feel and behave.
# Cognitive Style-Based Strategies

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<th>HCP Strategy</th>
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<td>Denialist</td>
<td>“No data supporting vaccine safety”</td>
<td>Provide materials, consistent messaging, avoid pressuring/persuading</td>
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<td>Innumerate</td>
<td>Lack of understanding of probabilities and risks</td>
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<td>Analytic</td>
<td>“What are the risks and benefits?”</td>
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<td>Heuristic</td>
<td>“I heard of a case of … ”</td>
<td>Face value appeals, strong HCP recommendation</td>
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The Believing Brain
From Ghosts and Gods to Politics and Conspiracies
How We Construct Beliefs and Reinforce Them as Truths

Michael Shermer
Author of Why People Believe Weird Things
Belief-dependent realism

“We form our beliefs for a variety of subjective, personal, emotional, and psychological reasons in the context of environments created by family, friends, colleagues, culture, and society at large; after forming our beliefs we then defend, justify, and rationalize them with a host of intellectual reasons, cogent arguments, and rational explanations. *Beliefs come first, explanations for beliefs follow.*”
Example of Bandwagoning

Jane is a 30 year old mom of a new infant. She reads a lot of “mommy blogs” online that talk about the dangers of vaccinating children. These women discuss the connection between vaccines and autism, discuss the dangers of putting chemicals into their children’s bodies, and similar subjects. After a year of reading these blogs, Jane decides that a good parent wouldn't vaccinate since all these knowledgeable bloggers aren’t vaccinating their children. She doesn’t want to be considered a bad mom.

How would you proceed with someone using this cognitive style?
The Bandwagoning Patient

In the case of Jane, she is being influenced by what those around her are saying.

Ways to proceed:

- Discuss what qualifications these bloggers have vs. the qualifications of HCWs. Would you trust health care advice that your cashier at Wal Mart gives you?
- Discuss what “good parenting” might mean, and how we can protect our children. Affirm that you can see that they want what is best for their child!
College student Emily has recently gotten into the alternative medicine movement after a number of her sorority sisters convinced her that it was better and less dangerous for her. When hearing the risks of a vaccine her provider suggested she receive, she says “A 1 in a million risk sounds high, there’s too much of a chance I’ll get the side effect. I have to avoid the vaccine” and she refuses the vaccination.
How To Spot An Innumerate Phenotype – Verbal

“...I don’t care what the data say I believe…”

“I’m just afraid that I’ll get this side effect (GBS)…”*

“It’s too risky, what if ..... happens?”

“How do we know it’s safe to get the flu vaccine every year?”

*see 13 March paper and commentary in The Lancet on flu vaccine and decision-making
A Primer for the Innumerate

- Temporality ≠ Causality
- Correlation ≠ Causality

Innumerates:
- Have a strong tendency to personalize
- Dramatically underestimate the frequency of coincidences
- Believe that the plural of “anecdote” is “data”
- Value anecdote or emotion over facts
- Cannot understand or manipulate concepts of probability/risk
The Innumerate Patient

In the case of Emily, she is bandwagoning and is having difficulty manipulating numbers or understanding probability and risk.

How do you proceed?

- Give Emily rates of risk for other things that she might do, explain the chance of getting the disease, or possibly give an emotion-based story of someone who was harmed by that disease.
Mark, a 40 year old male, comes in for his annual exam and refuses an influenza vaccine, saying “I don’t care what the data show, I don’t believe the vaccine is safe. We all know is that we can’t trust the data anyways since the people who complete the research studies have a vested interest in the vaccines being approved for use. You just can’t trust the data.”

How do you proceed with this type of patient?
The Denialist Patient

In the case of Mark, he disbelieves accepted scientific facts, and may believe in conspiracy theories.

How do we proceed?

- He may need time to develop trust. Discuss how he might develop trust, where he gets his information from, and what might help him feel better about the information he receives. Use motivational interviewing to help guide the patient to a more accepting position on vaccines. Pushing the data is likely to shut him down.
Motivational Interviewing

- In this type of conversation, the HCW listens empathetically and has the patient voice the arguments for change (in this case, accepting vaccine)

- Patients tend to shut down when pushed, so when HCWs can listen accurately and empathetically, patients engage more fully in conversation

- Instead of being told what to do, the patient is an active participant in his own health and decision making process (trying to hook patients into their own intrinsic motivation)
Issues Relevant to Vaccine Coverage

- Failure to understand the role of preferred cognitive styles in vaccine decision-making
- Failure to understand the meta-narrative of story and emotion in how people make decisions
- Low cognitive complexity thinking
  - Conspiratorial thinking
- Innumeracy
- Bandwagoning
- Denialism
What Does This Mean For You?

- Watch how your own biases and cognitive styles play out as you meet with patients and make your own health care decisions.

- Communicate with your patients in a way that fits with their cognitive style, thus increasing the likelihood that they will make healthy decisions about behavior.
Conclusions

- Ample data demonstrate that we make fundamentally flawed decisions due to unconscious biases.
- We operate on a belief-dependent realism model and therefore data does not change our minds.
- We make systematic errors in judgment and choice.
- We would be wise to understand the role of cognitive bias and preferred cognitive styles in our lives.
- Understanding these can make a positive impact on our practices and our interactions with patients.
Thank you!

For further questions, please contact me at poland.caroline@gmail.com