**UNIT 10: Patient Adherence**

Overview: Patient Adherence

10A: Introduction to Adherence and Choice Information: The video defines adherence gaps as following from patient intentions and / or patient actions. It covers how choice information can be presented in a way that encourages particular intentions and that (in some situations) creates nudges towards specific actions.

10B: Patient Psychological Processes: This video continues the discussion of encouraging adherence by focusing on patient psychological processes in decision making. Understanding and measuring components of health belief models can help predispose patients towards action. Providing support to overcome barriers can enable patient actions. Recognizing the need for reinforcement over time can help with longer-term adherence.

Learning Objectives:

1. Understand the distinction between intention and action
2. Understand the value of framing choice information to create intention and the value of both framing and of nudges to generate action within simple, quick decision environments
3. Understand ongoing psychological process related to adherence:
   1. Measure aspects of the health belief model to diagnose and support generation of intention through predisposing factors
   2. Measure barriers to intended change and put into place enabling factors
   3. Recognize the value of reinforcement over time

Role in Course: The Unit focuses on patient adherence with recommended, evidence-based health behaviors. In Unit 9, we focused on preference-sensitive decisions where the patient and provider actively decide together what care is best. In Unit 10, we largely assume that either there is no preference-sensitive decision to be made (i.e., the evidence base points to one preferred course of action) *or* a preference-dependent decision has already been made (and now needs to be implemented). Note that better patient adherence is often a way to get more value from our best treatment and prevention options; even very clearly desirable healthcare is often less useful if the patient doesn’t follow through with his or her side of co-production.

**Intentions versus Actions**

One very fundamental distinction in this area is that adherence can be harmed through intention failures or action failures; interventions designed to address one failure often cannot address the other.

**Intention failures** follow when patients do not intend to adhere to physician recommendations. Because of the common power imbalance between patients and providers, patients may very well avoid directly questioning provider directives. What later looks like an unwillingness or inability to follow through might have been a problem present from the initial decision (or lack of a decision) on the part of the patient.

**Action failures** occur when patients fail to follow through with what they (the patients) intended to do. Even perfect clinical care can rarely create maximum value without the patient’s cooperation. If the patient agrees about the treatment, we have intention. But we know from social psychology that action does not always match intention. We sometimes call these action failures “the intention-action gap,” and that gap tends to be particularly large for socially desirable actions such as eating well or exercising.

More generally, we know that patient adherence, like most health-related outcomes, is multiply determined. Many of the causes of poor adherence are modest; they include things such as simple misunderstanding or incorrect beliefs, forgetting, etc. Two broad ways to address these issues, discussed next, are by altering the way the choice is presented or by supporting the patient’s psychological processes.

**Framing of Choice Information**

One approach to increasing adherence leverages the biases discussed in Unit 9. If we understand decision biases, we can leverage biases to push decision making in the desired direction. For example, Li and Chapman (2009 *Psychonomic Bulletin and Review*) leverage an effect called the **certainty effect** in the context of intentions. They find that vaccines described as 100% effective against 70% of all virus strains are preferred to vaccines described as 70% effective against 100% of all virus strains. Either way, the vaccine is 70% effective overall. However, in the first description, there is certainty that the vaccine will work, only on a narrower subset of virus strains.

In a different experiment, Chapman and colleagues find that uptake of flu shots is better when employees are emailed an appointment they could cancel or change (such that if they did nothing with respect to scheduling, they would have an appointment). Hence, they get better participant action (getting flu shots) when the “make no change” status quo situation results in an appointment.

**Nudges**

Nudges involve setting up a decision maker’s environment such that preferred actions are facilitated. Cafeterias that make apples easy to grab and candy less convenient to obtain are nudging diners towards eating apples.

An interesting report on the UK.gov “Nudge Unit” site covers an experiment addressing registry for organ donation. They find better uptake with an appeal that leverages a finding from social psychology known as reciprocity, i.e., a tendency to return favors or benefits to others.

**Patient Psychological Processes**

In many situations, a one-time nudge is not enough. Sometimes the psychological process related to adherence is extended over time because patients think about treatment decisions and / or because the relevant health behavior has to be sustained over time. In these cases, framing choice information or implementing nudges might help a bit, but these actions are usually not enough. In these more drawn-out processes of creating intentions and actions, it’s important to think about the time course of patients’ psychological processes. We find that different interventions work at differing stages.

I will break down the patient process into three stages: predisposing factors matter for the first stage, enabling factors matter for the second stage, and reinforcing factors matter for the third stage.

*Predisposing Factors*

Predisposing factors are relevant when we are actively trying to persuade the patient to adopt beneficial intentions. For this stage, we focus on building patient motivation through positive attitudes and beliefs. (Choice presentation, discussed earlier, is one tool here.)

There are many models of persuasion for health behavior, for instance the health belief model and multiple variants of that specific model. These related theories point to several beliefs are helpful for encouraging positive health intentions.

The psychological state of readiness to adopt a specific health action depends on the patient believing there is a viable **health threat**. There are two parts to this. First, the patient must feel personally **vulnerable** or susceptible to the threat. Second, the patient must perceive that the threat is **severe** or serious enough to warrant action.

Taken together, these first two factors specify that I must, personally, feel vulnerable to a severe threat to motivate protective action. But we also know that threat must be balanced with coping. If I feel threatened, but also feel as if nothing can be done, then instead of taking action, I’m likely to avoid thinking about the situation entirely. This is where the second set of beliefs come into play.

There are two parts to the belief that a health threat can be reduced. First, I have to believe an action is beneficial in reducing the threat in general. We often call this **response efficacy**. Second, I have to believe that I, personally, am able to carry out the action. We often call this **self-efficacy**.

So, overall, when we’re trying to influence patients to adopt positive health intentions, we have to make sure that two overall sets of beliefs are in balance: First, the patient must perceive a severe (i.e., consequential) and personally relevant threat, and second, the patient must perceive that there is an effective response he or she can actually carry out. Threat without efficacy tends to create fear and avoidance rather than positive action.

All four of the beliefs I’ve just described are relatively straightforward to measure. Measuring perceived vulnerability, severity, response-efficacy, and self-efficacy is often a great place to start in terms of diagnosing how to influence patient intentions to adopt positive health behaviors.

More generally, sometimes, when we measure patient assessments of health decisions, we can isolate a specific knowledge gap (e.g., ignorance of personal vulnerability). Sometimes this means actually attacking incorrect beliefs. Either way, assessing patient beliefs about actions can help us determine how to target interventions. If we can get patient beliefs to line up with medical understanding, we can often bring patient intentions into better alignment with clinician intentions.

Even once a patient is sold on the value of a health behavior or intervention, they may still run into barriers in terms of acting on their intentions. To help overcome these barriers, we look at enabling factors.

*Enabling Factors*

We often also have to focus on enabling factors, or overcoming barriers to action. These factors mostly address our second gap in patient adherence, specifically they focus on trying to align patient actions with patient intentions.

There are many, many factors that can help patients overcome barriers to adherence. Multiple studies conclude that simply helping patients to **form plans** up front can help. It is particularly helpful if the plans involve both actions and coping. So, patients might be asked to write out how they plan to engage in the action of quitting smoking. They might also be asked to write out how they would overcome barriers to quitting, for instance what they would do if a friend offered them a cigarette. Further, we also know that **social support**, or support from others, is also important. There are many forms of social support, for instance, emotional support where someone just listens. A meta-analysis of several studies of social support shows that on average the most useful social support is practical. This practical social support involves direct assistance such as transportation, reminders, and help with organization. What’s nice about this finding is that practical social support can often be outsourced from a patient’s family and friends to a provider organization. Something as simple as email or phone reminders can help close the intention-action gap.

More generally, as with health beliefs, barriers that cause intention-action gaps can be measured. Patients who fall short of their own intentions can often be asked why. If the question is asked in an accepting, value-neutral way, many patients will volunteer why they got off track. These questions might not give the researcher perfect insight, but patients are often very able to articulate the barriers they experience. Barriers can then be addressed for greater adherence.

*Reinforcing Factors*

Finally, patients often falter at creating sustained action over time. Because of this, we also have to focus on reinforcing factors, looking at the patient’s perceptions of the rewards and costs of ongoing (or repeat) adherence. Like enabling factors, reinforcing factors are focused on trying to align patient actions with patient intentions over time, as the patient experiences barriers to ongoing positive action.

The reinforcing factors needed for repeat adherence over time often overlap significantly with enabling factors. The difference is simply whether we’re focused on enabling an initial behavior (maybe throwing out all of one’s cigarettes) versus on reinforcing a repeated behavior once initiated (maybe keeping consistently tobacco free over months or years). For the latter, we often must acknowledge that motivation can wane over time. One thing that can help with sustaining action is an overall incentive or goal. For instance, a cash bonus for staying tobacco free over months or years might keep individuals motivated. Similarly, ongoing support through health coaches (even using relatively cheap phone calls) might help foster long-term motivation.

**Summary**

If we understand underlying decision processes, we can frame the same choice information in a way that makes the actions that we prefer more attractive to the patient. This is a good way of influencing intentions, and in situations where action is quick and simple, even influencing action. It may not always be obvious which aspects of choice information will really drive a result, so the main idea to keep in mind is that how you present information can very well matter, even when the objective, scientific content of that information is fixed. This idea often leads us to test various ways of providing key information.

When health decisions and health behaviors are extended over time, simply presenting choice information or creating a nudge at the point of choice may not be enough. In these cases, we can look carefully at patient behavior in order to identify multiple opportunities for intervening in terms of how patients think about, initiate, and sustain health behaviors.

* We can study predisposing factors as identified in the health belief model, recognizing that patients won’t act unless they understand the benefits of action and feel that they are able to cope with what needs to be done.
* We can study enabling factors, such as coping planning and social support, that help patients overcome barriers to the actions they intend to take.
* Finally, we can focus on reinforcing factors, such as direct patient incentives or the availability of ongoing support, that help patients sustain efforts over time

Overall, we’ve covered many ways to create desired patient intentions and to minimize gaps between intention and behavior. We often address intentions through how we present choices and also through addressing predisposing factors such as health beliefs. Sometimes, as with the organ donation registry example, we can address intention and action all at once; this is often what people mean when they talk about nudges.

More generally, I’ve argued that it’s important to match interventions to specific gaps in adherence. Before we intervene, we want to understand if the issue is with intention or action. If we’re implementing these interventions in a way that encourages cost-effective, beneficial, evidence-based care, then all of these actions should help us create value by supporting the patient’s role in co-production of health outcomes.