Chapter 4
Learning Principles of Human Behavior

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Behavioral principles are powerful predictors of human behavior. When health care professionals understand these principles, they can be applied to changing health behaviors. In this chapter, we review the principles, which many of the readers will be familiar with from undergraduate and graduate classes. We apply the principles to PBL cases to illustrate behavioral principles in medical care.

At the end of this chapter, the reader will be able to:

1. Define the important behavioral terms such as classical conditioning, operant conditioning, reinforcement, reward, punishment, reinforcement schedule, antecedents, consequences, stimulus control, modeling, and functional analysis
2. Apply behavioral principles to some common behavioral problems observed in medicine
3. Develop treatment plans for some common behavioral problems using behavioral principals

Case Vignette 4.1.1 Presenting Situation: Richard Smith

Richard Smith is a 58-year-old man who comes to see you, his primary care physician, for an annual exam. During the routine interview, you ask about tobacco use. He admits to being a smoker and smoking two packs of cigarettes per day for the last 40 years. Richard states that he wishes he could “quit this nasty habit,” but has had difficulty in the past.

Please proceed with the problem-based approach!

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Case Vignette 4.1.2 Continuation

When you ask Richard why he wants to quit now, he says that he has been hearing about all of the bad health effects of smoking. His wife has been nagging him whenever he smokes because she is worried about his health so he has been sneaking cigarettes behind her back and now he feels guilty about this. Richard will soon be a grandfather and he is worried about the potential effects of second-hand smoke on babies. He also wants to make sure he is around to enjoy his grandchildren growing up. In the past, Richard says he has tried stopping “cold turkey,” but the withdrawal symptoms and cravings drove him back to smoking after about 3 days.

Please proceed with the problem-based approach!

Learning Issues

Functional Analysis

You request the patient perform a functional analysis of his smoking. A functional analysis is a systematic way to characterize a behavior by examining events that happen prior to (i.e., antecedents) the unwanted behavior (in this case, smoking) and the consequences of acting out that behavior. Richard will record each cigarette he smokes and the activities leading up to the cigarette to find out what types of triggers or antecedents cause him to want to smoke. Smoking a cigarette has been paired with some environmental stimuli many hundreds of times, causing them to become classically conditioned. For example, a patient who smokes after a meal to satisfy a craving may find that he has an urge to smoke after all meals. You also ask Richard to make a list of the consequences of smoking to help understand the role of operant conditioning. Not all consequences are bad, for example the feeling of relief after having smoked. Some consequences are powerful reinforcers, i.e., increase the probability of smoking.

Case Vignette 4.1.3 Continuation

Richard returns to your office 1 week later with a daily log of cigarettes and activities. Table 4.1 lists some antecedents and consequences for his smoking and identifies them as punishing (any consequence that makes smoking less likely) and reinforcing (any consequence that makes smoking more likely). You notice that Richard has a cigarette upon waking, with morning coffee, after every meal, while